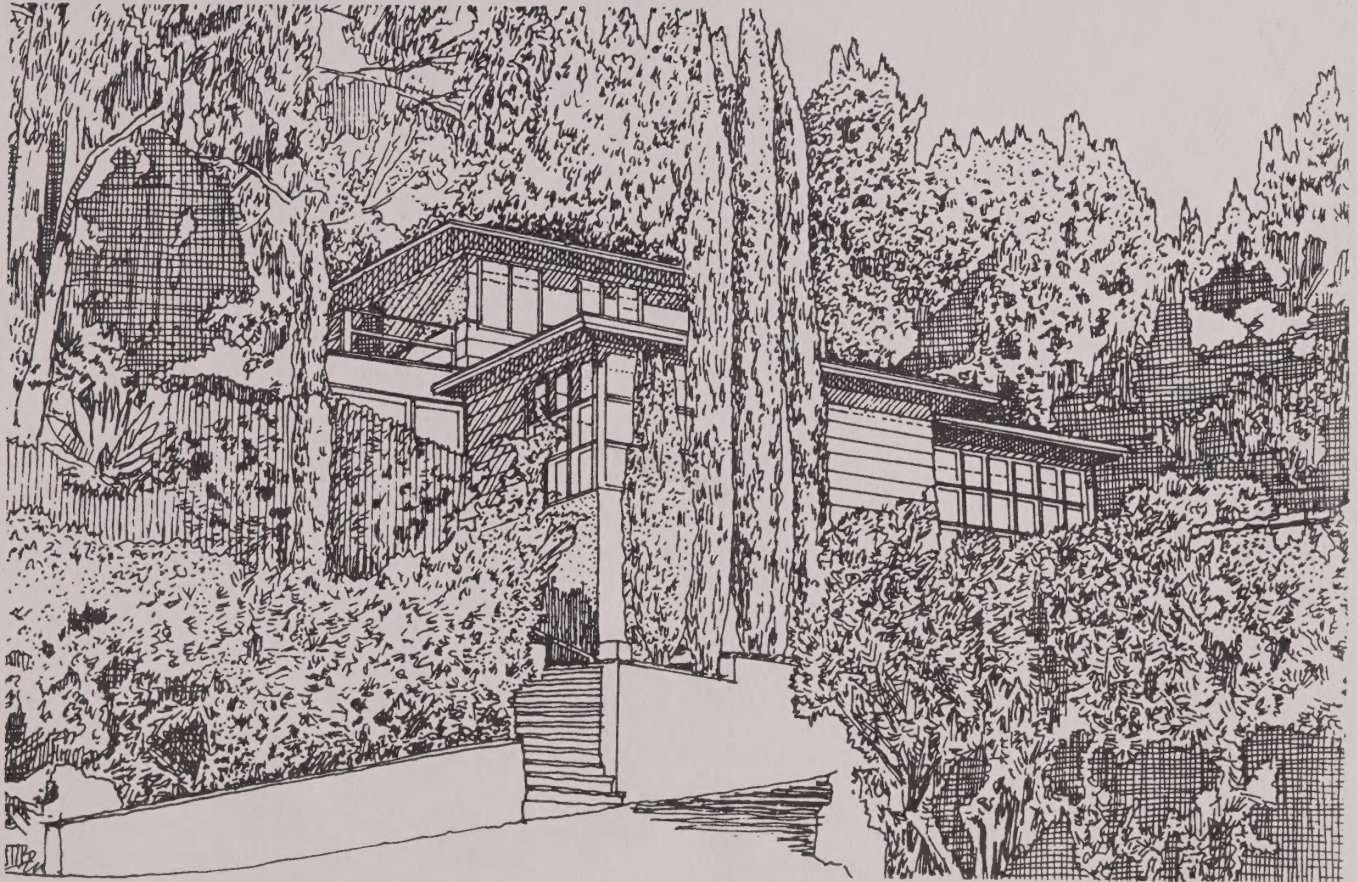


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# Hillside Residential Design Guidelines Manual

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City of San Rafael



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# Acknowledgements

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October 1991

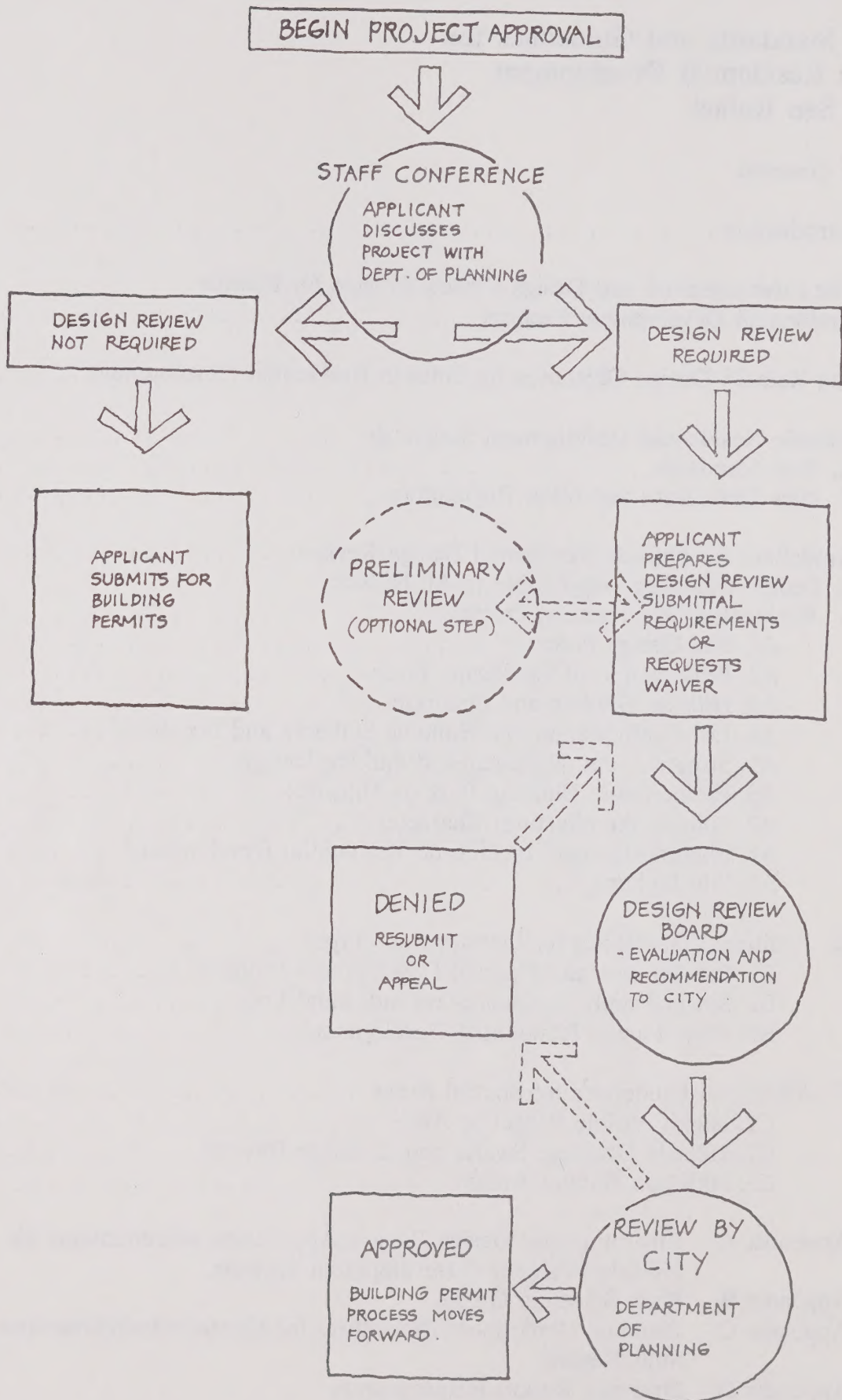
\*Special thanks to Pete Wray for his work in organizing Appendix B, "Plant Selection Guide."



# Design Standards and Guidelines for Hillside Residential Development City of San Rafael

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# Introduction

## A. The Purpose of Environmental and Design Review

The Environmental and Design Review Process is one of several procedures used by the City to protect the public welfare and natural setting. The process is a comprehensive evaluation of those characteristics of a hillside residential development which have an impact on neighboring properties and the community as a whole. The Environmental and Design review process makes a careful examination of a project's quality of site planning, architecture, landscape design and important details such as retaining walls, fences and site lighting. The purpose is to insure that every new hillside residential development will carefully consider the community context in which it takes place and make a compatible relationship to neighboring properties and City community design goals.

The *San Rafael General Plan 2000* describes citywide objectives and policies relating to design. Persons who use the Hillside Residential Design Guidelines Manual are encouraged to read the *General Plan 2000*.

## B. Application

This booklet outlines Development Standards and describes Design Guidelines to be used for hillside residential projects subject to the Environmental and Design Review process.

## C. Use of the Design Guidelines

Section IV, the Design Guidelines, is listed in a "tiered" organization and should be used in the following manner for projects subject to Environmental and Design Review:

1. First, consult Section IV.A, "General Design Guidelines," for all hillside residential development projects, regardless of use or location in the city.
2. Second, follow the Guidelines in Section IV.B, "Additional Guidelines for Development Types," that most closely correspond to the use of the project.
3. Third, follow the Guidelines in Section IV.C, "Additional Design Guidelines for Special Areas," that most closely correspond to the environmental character of the site, if it is a highly visible ridgeline, a watershed or drainage ravine or hillslope habitat area.

Should a question regarding the use classification occur, consult with the City Planning Staff.



# I. The Environmental and Design Review Process

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This booklet presents Design Standards and Guidelines for Hillside Residential Development in the City of San Rafael. It is intended to be used in three ways:

1. As a foundation for the creation of a Hillside Residential Overlay Zoning District that is combined with the underlying zoning regulations for the *Hillside Residential* and *Hillside Resource Residential* General Plan Land Use Designations,
2. As guidelines for Environmental and Design Review in Areas covered by the *Hillside Residential* and *Hillside Resource Residential* General Plan Land Use Designations, on other parcels with hillside character that are zoned for residential development, and
3. As guidelines for other types of project reviews for hillside residential development that is not subject to the Environmental and Design Review Process. Some of these standards are contained in other City Ordinances. Where that is not the case, the standards must be authorized through appropriate measures before they can be used in project reviews.

## Environmental and Design Review

Section IV of this manual provides guidelines for Environmental and Design Review in areas covered by the *Hillside Residential (HR)* and *Hillside Resource Residential (HRR)* Land Use Designations in the recently adopted *San Rafael General Plan 2000* and on other parcels with hillside character that are zoned for residential development.

Environmental and Design Review in San Rafael is administered by the Planning Department of the City of San Rafael as part of the Development Review Process. Projects are evaluated by the San Rafael Design Review Board, a panel of citizens appointed by the City Council. Actions of the Design Review Board are advisory to the various City authorities (Director of the Planning Department, Planning Commission and City Council) who issue decisions on development proposals.

## Development Subject to Environmental and Design Review

Environmental and Design Review is a required step in the development process for the following types of hillside residential development projects located within the limits of the City of San Rafael and areas within its sphere of influence:

- All Hillside Residential Subdivisions and Planned Residential Developments on hillsides covered by the *Hillside Residential (HR)* and *Hillside Resource Residential*

(**HRR**) Land Use Designations and on other properties with slopes of 25% or greater.

- All Single Family Residential Development, including additions over 500 square feet in size, and elevated decks, or additions that increase the height of the roofline on individual lots in the areas covered by the **HR** and **HRR** Land Use designations and on other parcels with slopes of 25% or greater.
- All Multi-family and Duplex Residential Development in the areas covered by the **HR** and **HRR** Land Use designations or located on slopes over 25%.

### **The Purpose of Environmental and Design Review**

Environmental and Design Review is one of several development review procedures used by the City of San Rafael to protect the public welfare and environment. The process is a comprehensive evaluation of those characteristics of a development which have a physical and visual impact on the natural setting, neighboring properties and the community as a whole. Environmental and Design Review makes a careful examination of a project's quality of site and environmental planning, architecture, landscape design and important details such as signage and site lighting. The purpose is to insure that every new development will carefully consider the community context in which it takes place and make a conscientious effort to develop a compatible relationship to the natural setting, neighboring properties and city design goals.

San Rafael residents have strong feelings about the quality of the City's natural setting and the hillside character of residential neighborhoods. The Environmental and Design Review process is intended to protect and retain San Rafael's hillside character.

### **How the Environmental and Design Review Process Works in the Evaluation of Hillside Residential Development Projects.**

The San Rafael Design Review Board evaluates Hillside Residential development proposals using the Design Guidelines described in this manual as criteria.

The Board may recommend to:

- Approve or disapprove proposals.
- Approve proposals subject to conditions.
- Request the applicant to re-submit the proposal with specific changes.
- Forward the project with no recommendation.

Recommendations of the Design Review Board are advisory to the various hearing bodies that will issue final decisions on development applications. Appeals of those decisions are handled through Subdivision Ordinance appeals procedures established by the Zoning Ordinance and the Subdivision Ordinance.

Design Review Board Members will be instructed by Planning Department Staff on the application of the Guidelines, the limits of the Board's review, and the necessity for substantiating the Board's recommendation by identifying those applicable Guidelines that are satisfied or not satisfied by the proposed development.

Prior to the Design Review Board meeting, city staff will refer applications to the appropriate neighborhood associations for written comments.

## **Steps in the Environmental and Design Review Process**

### **1. Staff Conference**

Before planning and design begins, the developer is strongly urged to meet with the City Planning Staff relative to Environmental and Design Review of Hillside Residential Development. The nature of the project and site should be described. The planning staff member will clarify review procedures and submittal requirements. Critical design issues and Design Guidelines important to the project may be discussed.

### **2. Preliminary Review (optional)**

This step is optional but highly recommended for large or complex projects or projects requiring extensive grading or alteration of natural features.

Preliminary Review allows the developer to meet with the Design Review Board to discuss basic intentions and plans before investing time in detailed design. At this stage, site analysis and design, location of buildings, grading, basic form of buildings and landscape concepts are important. Building elevations and other information may be discussed but should be kept in preliminary form.

Preliminary Review is an informal process enabling the applicant to receive input from the Design Review Board and get its opinion on the basic concept of the development proposal. The Board will not take official action until Final Application and Review.

### **3. Waiver Considerations**

Applications which are of a limited scope, e.g., small additions (under 500 square feet) to existing structures, construction of accessory structures, and limited grading or site modification, may require only staff level review and approval. Projects of greater scope or on critical sites are subject to review and approval by the Design Review Board. This two-tiered process allows minor projects to be processed without needless delay and major projects, or those on critical sites, to be reviewed in a more formal manner.

Occasionally, on minor projects, the Design Review Board may recommend a waiver of the final application and review requirements. Projects which may be considered for this waiver include:

- a. Projects which are minor in nature and preliminary review satisfies the Design Review Board's concern.
- b. Projects which, if subjected to final application requirements, would not materially contribute to the attainment of the City's Design objectives.

#### **4. Full Submittal, Application and Review**

The one required step in the process of Environmental and Design Review for Hillside Residential Development, unless a waiver has been granted, is Full Submittal of an Application and appearance before the Design Review Board. Full Submittal Requirements for Application and Review are given in Appendix A of this booklet.

Applications are filed with the Planning Department. Within 7 days of receipt of a complete application, copies of the application are assigned to a staff planner who reviews them for compliance with submittal requirements. Once the application is complete, the staff planner then schedules the item for review at the next available Design Review Board Meeting and informs the applicant of the time, date and place for the review.

Evaluation of the project by the Design Review Board should focus on the topics contained in this manual. The Design Review Board makes a recommendation to the Applicable City approval authority, citing specific guidelines to which the project conforms or does not conform.

The Zoning Ordinance establishes the appropriate hearing body for applications. If there are major neighborhood concerns, the item may be referred directly to the Planning Commission by the Planning Director. The approval authority also evaluates the project for conformance to this manual, considers the Design Review Board's recommendation, and renders a decision. The decision may be appealed in accordance with the City's appeal procedures.

## II. San Rafael's Design Objectives For Hillside Residential Development

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The City of San Rafael has adopted specific policies to assist in the preservation and protection of the wooded and grassy hillsides, canyons and ridgelines that provide a natural scenic backdrop for the city's commercial districts and residential neighborhoods. The *General Plan 2000* states;

*"Those (properties) not publicly owned are projected to be secured as (public) open space either through public acquisition or through careful site planning so that any development will complement or avoid these important natural features."*

Toward this objective, the City has created Residential Land Use Categories and Density Ranges that relate specifically to sensitive hillside areas:

- A. *Hillside Resource Residential*: 0.1 to 0.5 units per gross acre. These areas are characterized by very steep slopes which have geologic and seismic constraints and which have community visual significance or which have been identified as having very limited development potential through prior development approvals, Neighborhood Plan review or County zoning. This designation is typical of sensitive hillside areas in the Planning Area.

- B. *Hillside Residential*: 0.5 to 2 units per gross acre. Characterized by moderate to steep slopes; often unstable geology; may have local visual significance. Typical of developed hillside residential areas in the Planning area.

*Maximum Densities are not guaranteed* by the ranges described in the definitions of the *HR*, *HRR* or other Land Use designations. Densities of residential development on any site shall be determined by the quality of their response to these Guidelines and the following factors:

- *Site resources and constraints.*
- *Potentially hazardous conditions.*
- *Traffic and access.*
- *Adequacy of infrastructure.*
- *City Design Policies and compatibility with existing development patterns.*
- *Compatibility with desirable qualities of building bulk and densities of adjacent developed areas.*

The City has adopted policies to implement the Environmental and Design Review Process to insure that new development is sensitive to the existing natural setting in its intensity and type of new residential development. Policies include:

- *Protection of views of the Bay, Bay wetlands and hills from public streets and open spaces.*
- *Protection of existing mature tree groupings, especially oak, redwood and eucalyptus trees groves and individual specimen oak and redwood trees.*
- *The use of desirable design techniques on hillside sites that minimize grading impacts, protection of sensitive areas such as steeply sloping/hazardous sites, natural drainage features and highly visible slopes.*
- *Requiring adequate landscape buffering between new development and sensitive habitat areas, as well as existing neighborhoods.*
- *Recognition of community concerns related to visually significant hillsides, ridges and landforms shown in General Plan Community Design Maps A and B.*

### **Specific Neighborhood Design Objectives**

The City has adopted Neighborhood Plans and policies that protect the character and development pattern of established residential neighborhoods.

Neighborhood Plans adopted for the Fairhills (1980), Sun Valley (1980), Gerstle Park (1979), and Peacock Gap (1983) neighborhoods set forth policies that :

- *Initiate the long range planning for the neighborhood.*
- *Set development standards by which applications for development will be measured.*
- *Propose means of improving neighborhood design quality.*
- *Address existing problems.*

It is the City's responsibility to implement the neighborhood plans and when adopted neighborhood development standards are different than the Citywide standards, the City shall enforce the more restrictive standards.

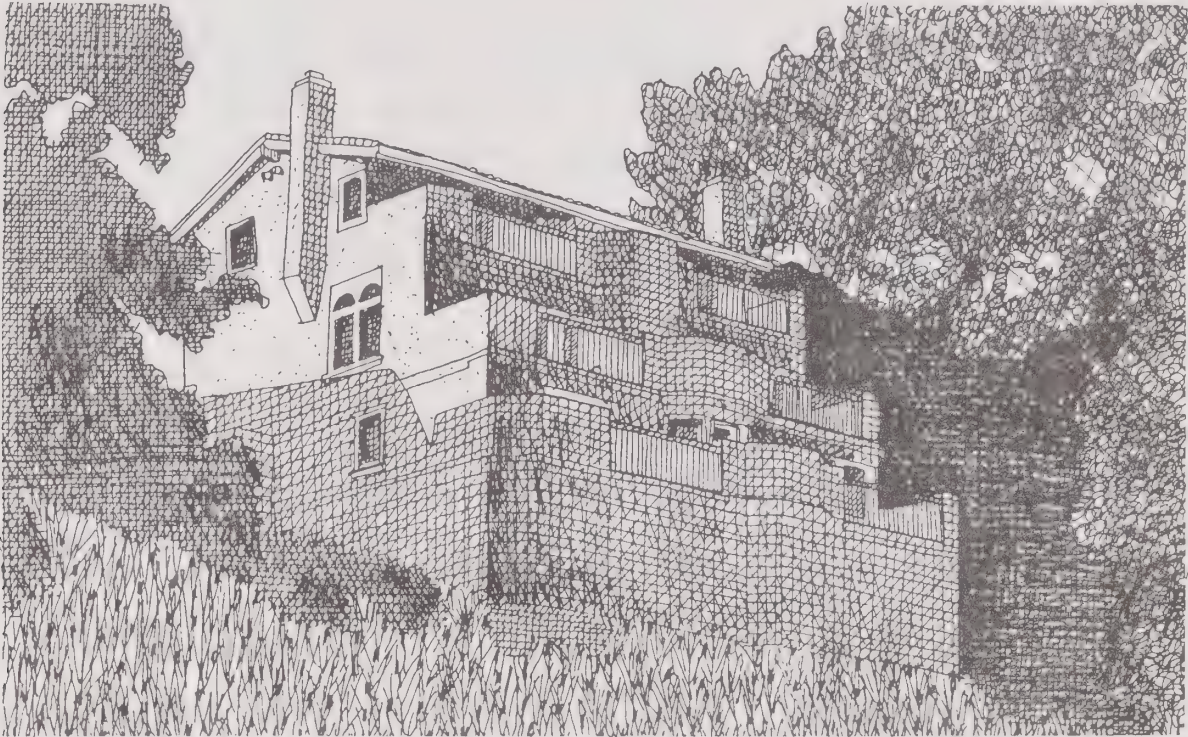
Specific Policies adopted by the City that relate to Hillside Residential Development for specific neighborhoods include:

- ***Gerstle Park*** Neighborhood - Preserve hillsides and ridges fringing the neighborhood.
- ***Fairhills*** and ***Sun Valley*** Neighborhoods - (Neighborhoods 13 and 14)
  1. Protect Open Space Hillsides which serve as backdrops for the neighborhood.
  2. Protect and preserve existing neighborhood residences including historic and architecturally significant residences.
  3. Encourage only new development which would enhance the neighborhood, protect natural site amenities, avoid development in hazardous areas or areas where extensive grading would result, preserve views of open space from existing homes and minimize traffic impacts.
- For the ***Lincoln*** Neighborhood - Hillside areas shall remain Low Density consistent with existing density and environmental constraints.
- For the ***Northgate*** Area - Hillside parcels at the end of Los Gamos Road and Orchid Drive are steep, highly visible properties with limited access. Development shall be clustered to avoid the visible hillside areas. Access to the northern parcel is very poor and should be considered through the southern parcel. If possible, development should be clustered toward Orchid drive.
- For the ***Scettrini Property*** - The site is steep and highly visible from the community. The hillside areas should be preserved and development should be clustered toward the lower portion of the site.



### III. Hillside Residential Development Standards

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#### A. More Restrictive Standards

The following table describes new Development Standards in the City of San Rafael's *Hillside Resource Residential (HRR)* and *Hillside Residential (HR)* General Plan Land Use Categories, and on properties with slopes of 25% or greater.

In the table, bold italics type indicates a change from existing standards.

**There are no changes** to the following existing standards:

- Ranges of permitted dwelling units per acre.
- Number of permitted dwelling units per lot area.
- Maximum Building Coverage.
- Maximum Building Height.
- Building setbacks, except when encroachments are allowed through Design Review.

The following definitions and regulations have been adopted:

- The method of calculating “Building Height” is changed.
- Limitations on the maximum building envelope along front and side lot lines to avoid excessive building bulk. This takes the form of a “Building Stepback” provision.
- Implementation of General Plan goals and policies concerning hillside residential development by creating a Hillside Residential Overlay Zoning District that may overlay or be combined with any principal zoning district. Regulations established by the Hillside Residential Overlay District are in addition to the regulations of the underlying zoning district with which they overlay or are combined. In the event of a conflict with the regulations of the underlying principal zoning district, the provisions of the Hillside Residential Overlay District would apply.
- A Maximum Gross Building Square Footage is introduced as a part of the Hillside Residential Overlay District, with permitted floor area based on lot area.
  - In all areas with the **HR** or **HRR** General Plan Land Use Designations and on lots combined with the Hillside Residential Overlay District, the permitted floor area of a structure (including garages and accessory structures over 120 square feet) is limited to 2,500 square feet + 10% of lot area with a maximum gross square footage limited to 6500 square feet.
  - On all lots with slopes over 25%.
- A natural state requirement has been adopted as part of the Hillside Residential Overlay District; the definition of “natural state” follows:

*Natural state: all land and water that remains undeveloped and undisturbed. This means that grading, excavating, filling and/or the construction of roadways, driveways, parking areas and structures are prohibited. Incidental minor grading for hiking trails, bicycle paths, equestrian trails, picnic areas and planting and landscaping which is in addition to and enhances the natural environment are permitted.*

The following changes have been made to existing development standards:

- All Residential Development Projects in the Hillside Residential Overlay District or located on slopes over 25%, will be subject to Environmental and Design Review, including single family residences on individual lots. The Design Guidelines in this Manual will form the Evaluative Criteria for Design Review of all Hillside Residential Development Projects.
- Coupled with the slope table that establishes minimum lot size relative to the degree of slope, The Maximum Gross Building Square Footage provision will keep building sizes and building coverages in an acceptable range.

- Buildings and structures may encroach into a required yard or setback for a distance of not more than one-half of the required yard or setback with the recommendation of the Design Review Board when the encroachment minimizes the impact of hillside development and grading.
- *Preservation of Natural Areas. The percentage of each parcel which must remain in its natural state shall be a minimum of twenty-five percent plus the percentage figure of average slope as calculated in Title 14 (Zoning Ordinance), not to exceed a maximum of eighty-five percent.*
  - Example: A parcel with an average slope of twenty percent would require in natural state twenty-five percent plus the slope percentage figure (twenty percent) for a total natural state requirement of forty-five percent. In addition, no development shall exceed the maximum building coverage allowed in the applicable residential zoning district except in clustering where the total area of the project shall be used in calculating coverage.
  - For Planned Development: The natural state requirement (%) is established at the Master Plan level for the total development property. Building envelopes would be used to establish the appropriate natural state for each lot.

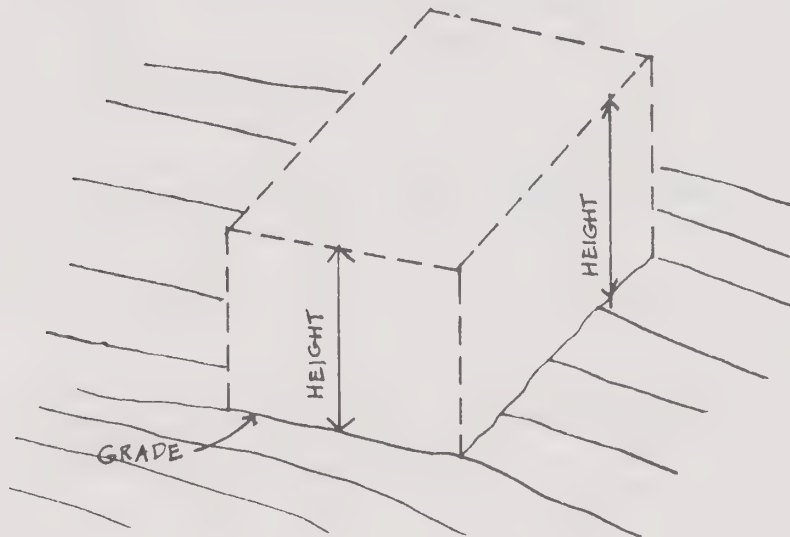
## Hillside Residential Development Standards

General Plan Land Use Designated (Dwelling Units/Acre)	Minimum Lot Area	Maximum Density (Units/Lot Area)	Maximum Lot Width (Feet)	Maximum Building Coverage of Site	Maximum Gross Building Square Footage	Maximum Building Height (Feet)	Additional Height Limit	Minimum Setbacks from Property Line
Medium or High Density Residential	Per Zoning Ordinance	Per Zoning Ordinance	Per Zoning Ordinance	Per Zoning Ordinance	NA	30 Ft. Measured from natural grade	Building Stepback	Same as zoning ord. except with D.R.B. recommendation and hearing body approval.
Low Density Residential	5,000-10,000 S.F.  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	2 - 6.5 gross units per acre  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	50-100 feet  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	Natural State Requirement	10% of lot area +2500 S.F. 6500 S.F. absolute maximum	30 Ft. Measured from natural grade	Building Stepback	Same as zoning ord. except with D.R.B. recommendation and hearing body approval.
Hillside Residential	20,000 S.F. to 2 acres.  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	0.5-2.0 units per gross acre  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	100-150 feet  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	Natural State Requirement	10% of lot area +2500 S.F. 6500 S.F. absolute maximum	30 Ft. Measured from natural grade	Building Stepback	Same as zoning ord. except with D.R.B. recommendation and hearing body approval.
Hillside Resource Residential	2 acres  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	0.1-0.5 units per gross acre  Refer to Chapter 15.34.020, Standards for Hillside Subdivisions, of the Subdivision Ordinance.	150 feet	Natural State Requirement	10% of lot area +2500 S.F. 6500 S.F. absolute maximum	30 Ft. Measured from natural grade	Building Stepback	Same as zoning ord. except with D.R.B. recommendation and hearing body approval.

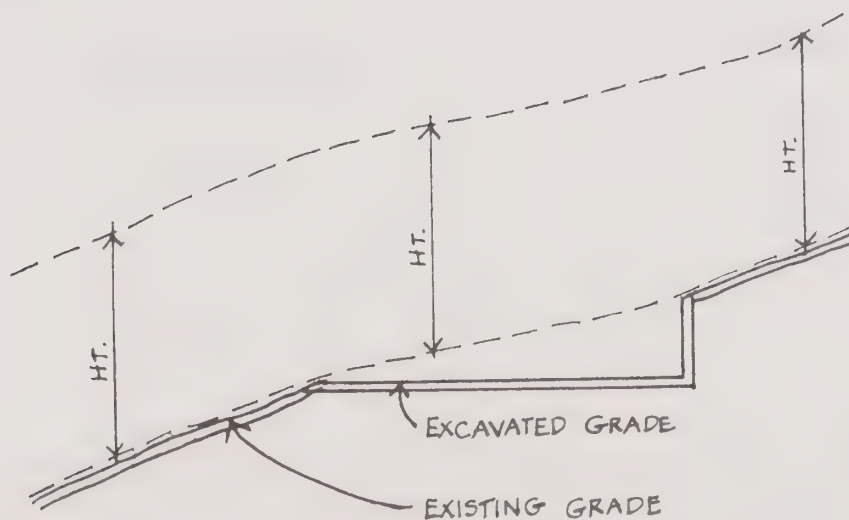
## B. Definitions and Other Regulations

### 1. Definition of Building Height

The height of all structures, fences and walls shall be measured vertically from the existing grade to the uppermost point of the roof edge or peak, wall, parapet, mansard or other feature perpendicular to that grade.



#### a. Height Measurement



#### b. Height Measurement — Section

## ***2. Definition of Gross Building Square Footage (Floor Area)***

The sum of all enclosed or covered areas of each floor of all structures on the site, measured to the exterior faces of the enclosing walls, columns or posts, but excluding the following:

- a. Areas permanently open to the sky.
- b. Exterior areas under roof eaves, trellises or cantilevered overhangs.
- c. Attic spaces and underfloor spaces that are not capable of being finished into usable space.
- d. Garage or storage spaces that are not capable of being finished into usable space and whose floors are at least six feet below existing grade. All points of the finished floor elevation must be below existing grade.
- e. Completely detached accessory structures 120 square feet or less in floor area.

The following areas shall be included:

- a. Basement areas, unfinished attic or loft spaces and other areas capable of being finished into usable space as determined by the Uniform Building Code.
- b. Garages and carport areas measured to the exterior face of surrounding walls, columns, or posts;
- c. Other roofs or covered areas supported by walls, columns or posts and capable of being enclosed; measured to the exterior face of surrounding walls, columns or posts;
- d. Roof Penthouses; and
- e. Accessory Structures greater than 120 square feet in floor area.

### ***3. Building Stepback***

Limitations on the maximum three dimensional building envelope (see Figures 1 and 2) are required to avoid excessive building bulk viewed from downhill lots and front and street side elevations.

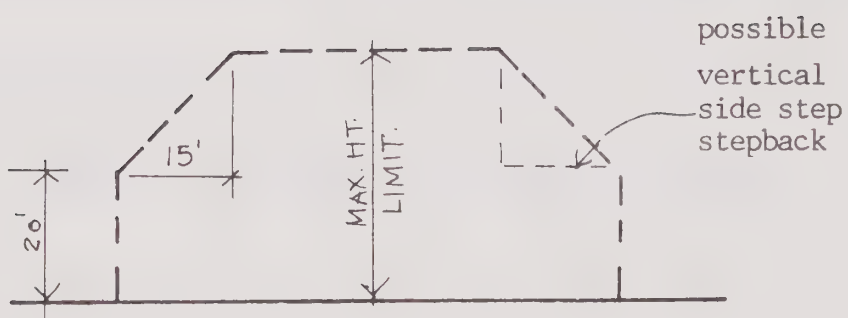
- a. A building stepback shall be required on the downhill elevation and all walls facing the front, street side and interior side property lines.
- b. Downslope Wall Height: Maximum allowed height of the downslope wall shall be 20 feet as measured from the lowest finish grade adjacent to the wall or directly beneath its outermost projection.
- c. Front and Side Stepback: On walls facing front property lines, the Stepback Zone includes all areas within 15 feet of the Maximum Building Envelope limit facing the front property line. Along side property lines, the Stepback Zone includes all areas within 15 feet of the building envelope limit.
- d. Within the Stepback Zone a 20-foot height limit shall be observed, measured from existing grade.
- e. Encroachments: To allow for Design flexibility, the following encroachments are permitted in the Stepback Zone:
  1. Street Front and Street Side: Along front and street side property lines, an encroachment into the Stepback Zone is permitted along 25% of the building length.
  2. Interior Side: Along interior side property lines, an encroachment into the Stepback Zone is permitted along 25% of the building length.

In each of the above cases, a partial height building element is permitted as an architectural encroachment into the Stepback Zone.

See Figures 1, 2 and 3, following.

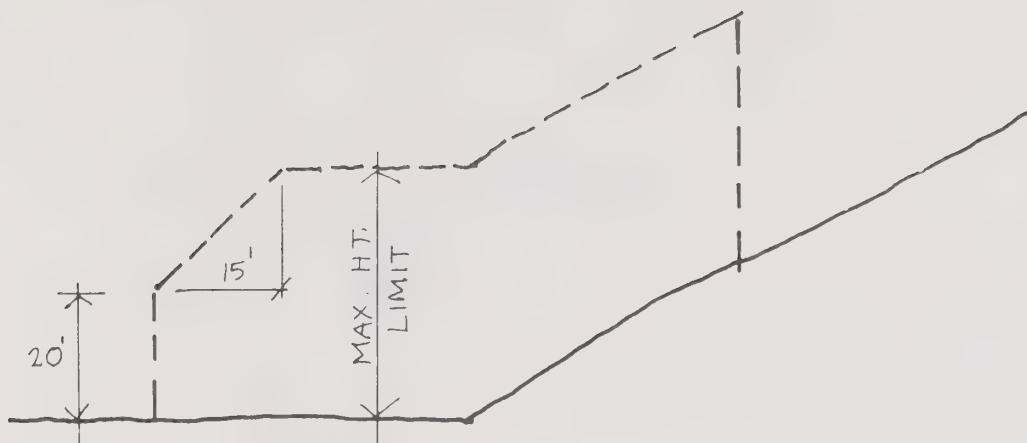


Downhill Section

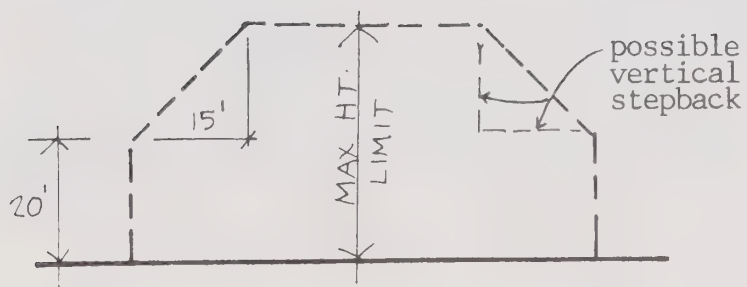


Street Elevation

Figure 1. Building Envelopes — Downhill Condition

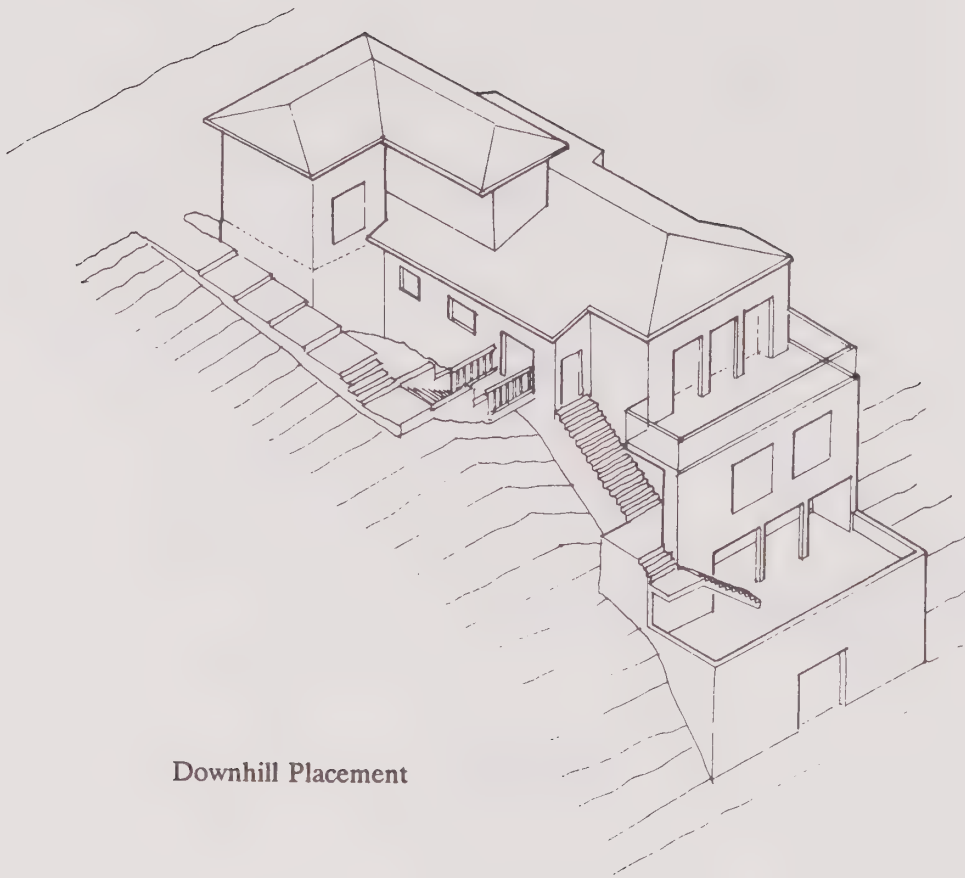


Uphill Section

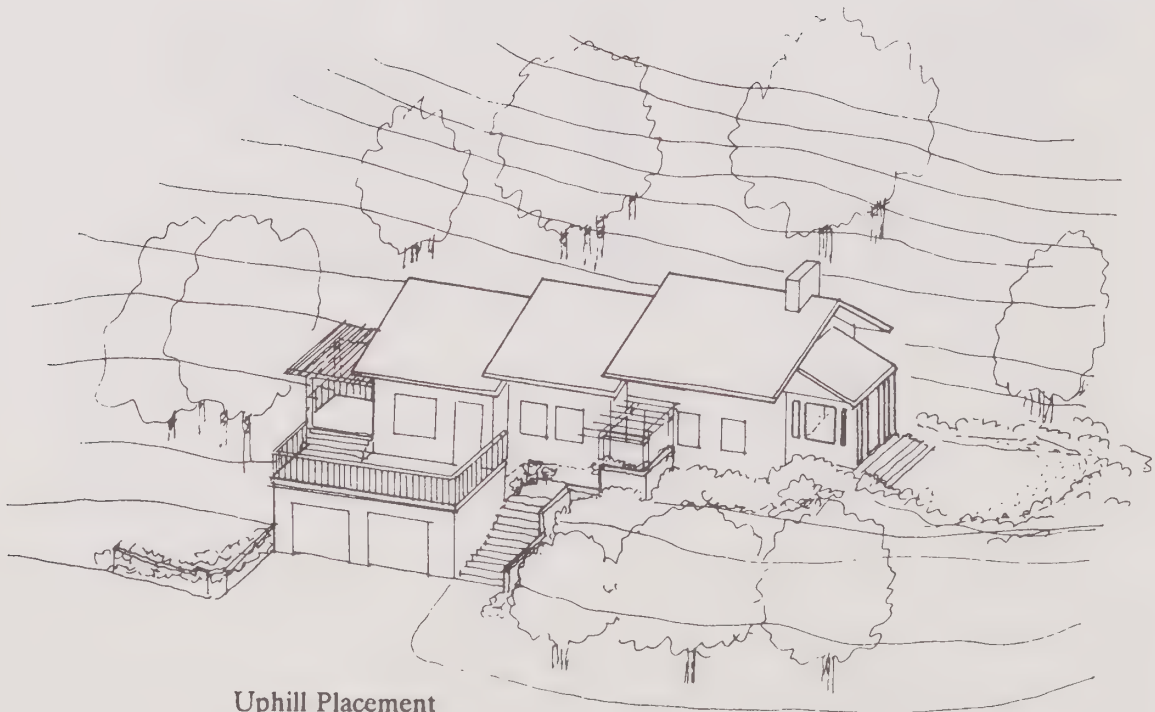


Street Elevation

Figure 2. Building Envelopes — Uphill Condition



Downhill Placement

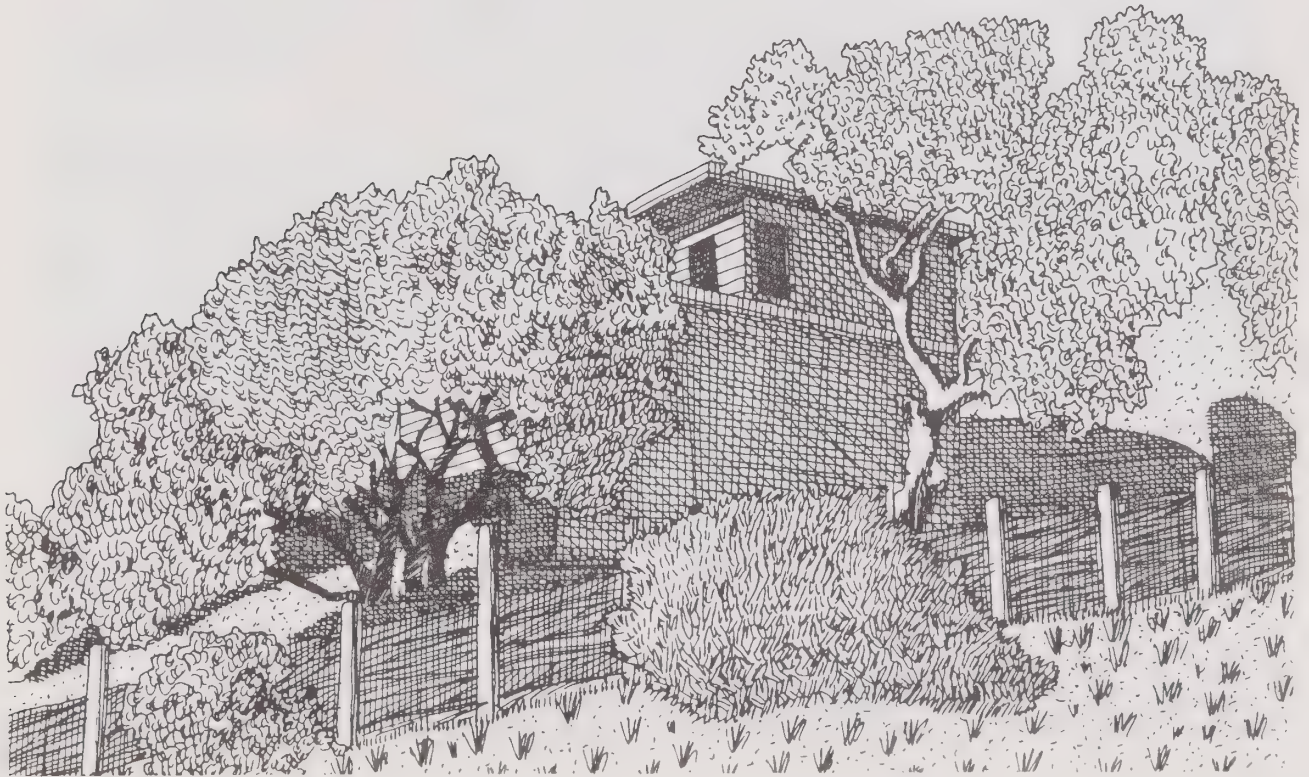


Uphill Placement

Figure 3. Illustrative Examples

## IV. Guidelines for Hillside Residential Design Review

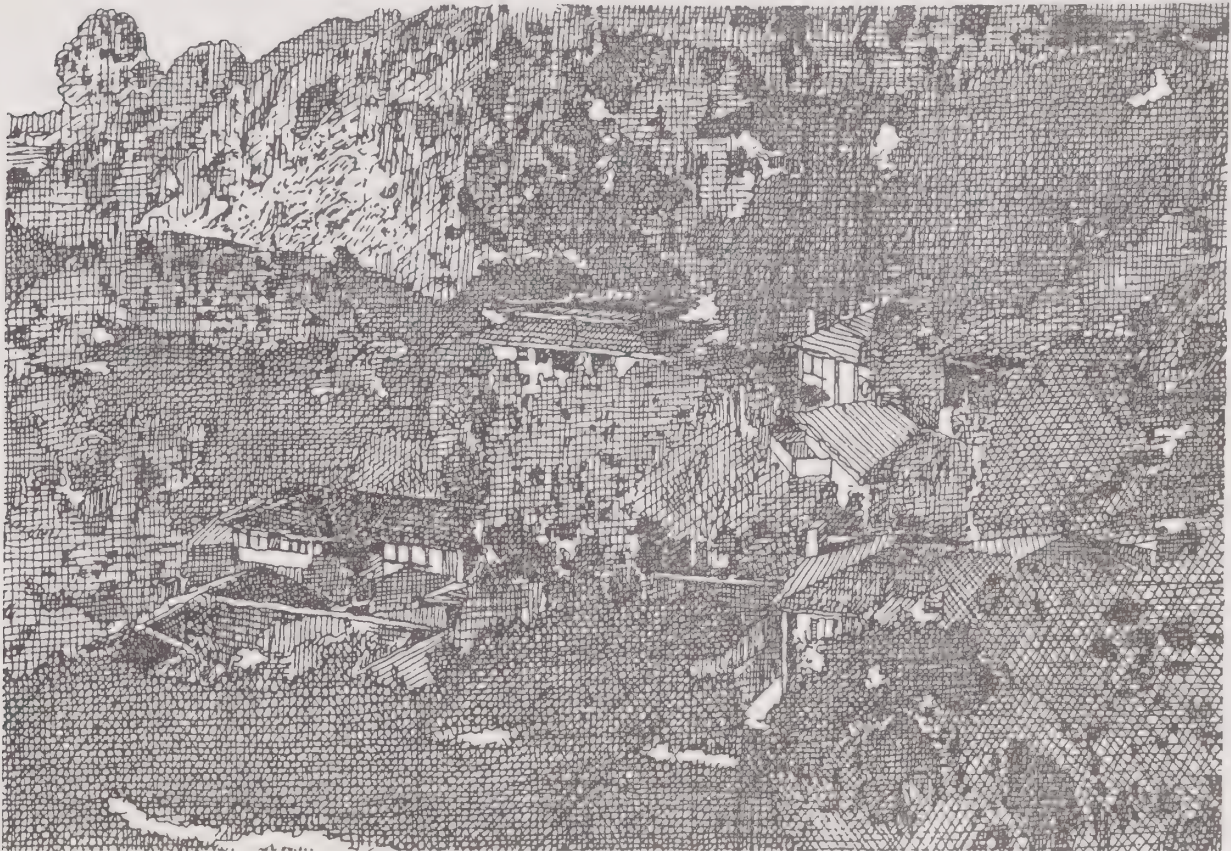
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## IV.A. Design Guidelines Applicable To All Hillside Residential Development Projects

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This section of the Design Guidelines applies to all Hillside Residential developments subject to Environmental and Design Review. The design elements of each project, site design, architecture, planting and site lighting, should all be complimentary and will be reviewed by the City on a comprehensive basis.

The following clarifications are necessary to understand the intent of these guidelines:

- the word “**shall**” is used to express what is mandatory.
- the word “**should**” is used to express what is acceptable to satisfy the objectives of these guidelines.



## IV.A1. Site Design Process

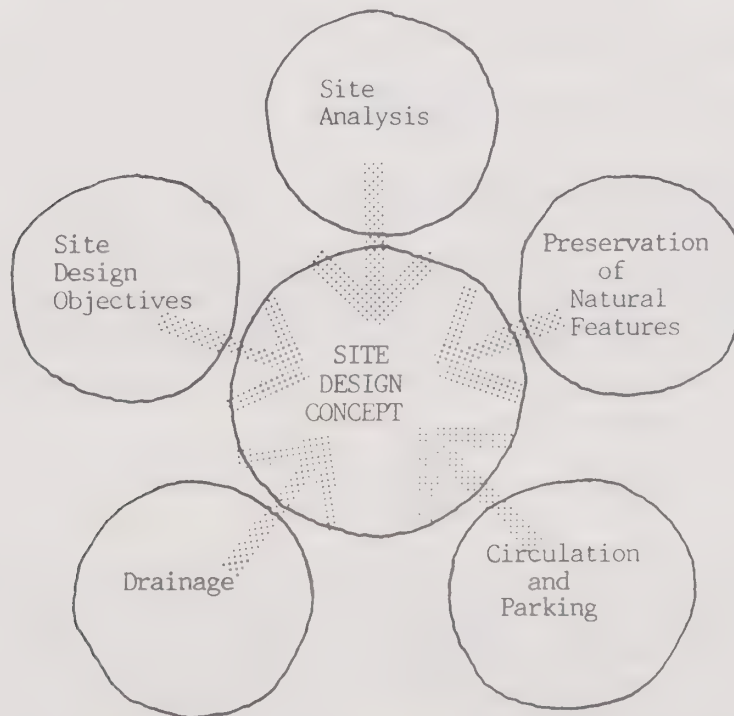
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The quality of site design will be given first priority in the review of development proposals. A project should display sensitivity to the natural hillside setting and compatibility with nearby hillside neighborhoods.

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### 1. Site Analysis

- Every development proposal for hillside residential projects should include a thorough analysis of existing conditions on and adjacent to the site. An analysis shall include a careful examination of a site's physical properties, natural features, special problems, visual character and an examination of the neighboring environment. The Analysis will assist the Design Review Board in evaluating a developments relationship to existing conditions, neighboring properties and the community.



- Appendix A of this manual lists specific Environmental and Design Review Application Requirements.

## **2. General Site Design Criteria**

A new hillside residential development should:

- Contribute to the hillside character of San Rafael's residential neighborhoods.
- Reflect the City's design goals and policies as expressed in the General Plan.
- Preserve or protect unique or special natural features of the site, such as landforms, rock outcroppings, mature trees and vegetation, drainage courses, hilltops and ridgelines.
- Avoid the highly visible open hillside areas.
- Be compatible with the natural features, building location and existing open spaces of neighboring properties.
- Respect the existing views, privacy, access to light and safety of neighboring properties
- Avoid the unstable or hazardous portions of the site.
- Minimize the removal of natural vegetation.

## **3. Preservation of Existing Natural Features**

Significant existing natural features should be integrated into new hillside residential development proposals to retain the desirable qualities of San Rafael's hillside setting. Existing topography, land forms, drainage courses, rock outcroppings, significant vegetation and important views should be recorded in the site analysis and incorporated into the design of Hillside Residential Development.

### **a. Mature Trees**

- Mature Trees should be retained and integrated into new hillside residential development. This will require careful judgement to determine the value, size and species of the trees relative to the other natural features of the site, fire safety and the development project program. This guideline is not meant to stop removal of undesirable trees.
- Existing trees over 12 inches (measured at 4 foot 6 inches above the root crown) in trunk diameter (for oaks, 6 inches) are considered significant resources to be preserved. See Guideline A3. "Preservation of Significant Trees" for definitions and descriptions.

**b. Significant or unique vegetation grouping which contributes to the character of the site.**

- Identify the vegetation grouping and its significance to its particular hillside habitat.
- Minimize alteration to surrounding topography and drainage characteristics.

**c. Topography**

- Minimize grading and alterations of natural landforms.
- Avoid building in areas of excessive slope, soil with poor bearing capacity, slide potential and other hazards. Exceptions may be allowed with design Review Board approval.
- Building pads should disturb natural contours as little as possible. Balanced cut and fill volumes are desirable.

**d. Drainage**

- Minimize surface drainage problems on neighboring properties and provide adequate drainage on site.
- Natural drainage courses are to be preserved as close as possible to their natural location and appearance. "Dry Stream" effects (manufactured drainage courses designed to simulate natural drainage courses) which move water over the property is preferred over channelling or underground methods.

**e. Circulation and Parking**

- Provide a clearly organized circulation plan for automobiles, pedestrians and service vehicles.
- On hillside sites, roads and streets should be located and landscaped to minimize views from the valley floor, roads and neighboring properties.
- Offstreet visitor parking should be located in bays that fit with the natural topography and minimize grading.
- Road widths may be reduced to the minimum acceptable to the City Engineer and Fire Department if allowed by the Design Review Board and if site impacts are minimized.
- Provide access to existing open space areas.



## IV.A2. Preservation of Significant Trees

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Significant Trees are important aesthetic and ecological resources that contribute to San Rafael's distinctive character.

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### 1. Definitions

- “Significant Tree” shall mean any tree which is in good health and form and is more than 12 inches in diameter as measured 4 feet-6 inches above the root crown.

Any tree of the *Quercus* (OAK) genus which is in good health and form and is more than 6 inches in diameter as measured 4 feet-6 inches above the root crown is considered a “significant tree.”

### 2. Guidelines

- Site development plans should demonstrate that a diligent effort has been made to retain as many significant trees as possible.
-

#### **a. Criteria For Removal**

- In assessing the number of trees and specific trees that may be removed, the applicant and Design Review Board should consider the following criteria:
  - 1) The condition of the tree with respect to disease, danger of falling, and the proximity to existing or proposed structures. Should debate over the health of the tree arise, a certified arborist should be consulted at the expense of the applicant.
  - 2) The necessity to remove a significant tree in order to construct proposed improvements to prevent extreme economic hardship to the owner of the property.
  - 3) The topography of the land and the effect of the significant tree removal on erosion, soil retention, and the diversion or increased flow of surface waters.
  - 4) Accepted professional forestry practices, such as the number of healthy trees which a given parcel of land or area can support.

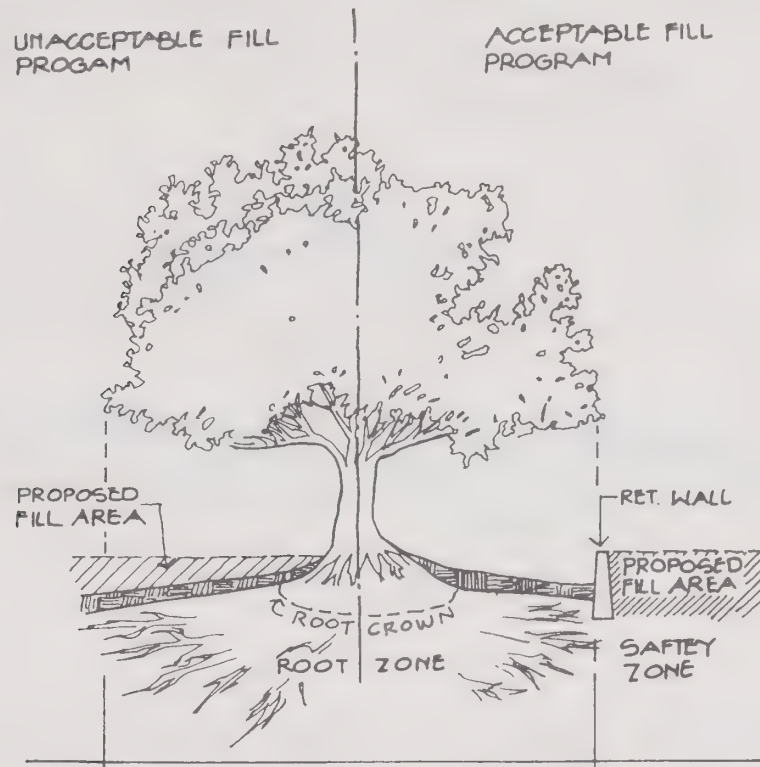
#### **b. When Significant Trees Must Be Removed**

- When significant trees must be removed, replanting with species listed in Appendix B is recommended. Designers of each site should take responsibility for the correct tree selection and compatible site conditions for each type of tree.
- Trees shall be replaced at a ratio of 3 new trees for every tree removed.
- Minimum tree size shall be 15 gallon. Exception to this requirement may be allowed by the Design Review Board (i.e., more plantings of smaller sizes) when site conditions warrant.
- Replant trees and shrubs consistent with surrounding native vegetation.

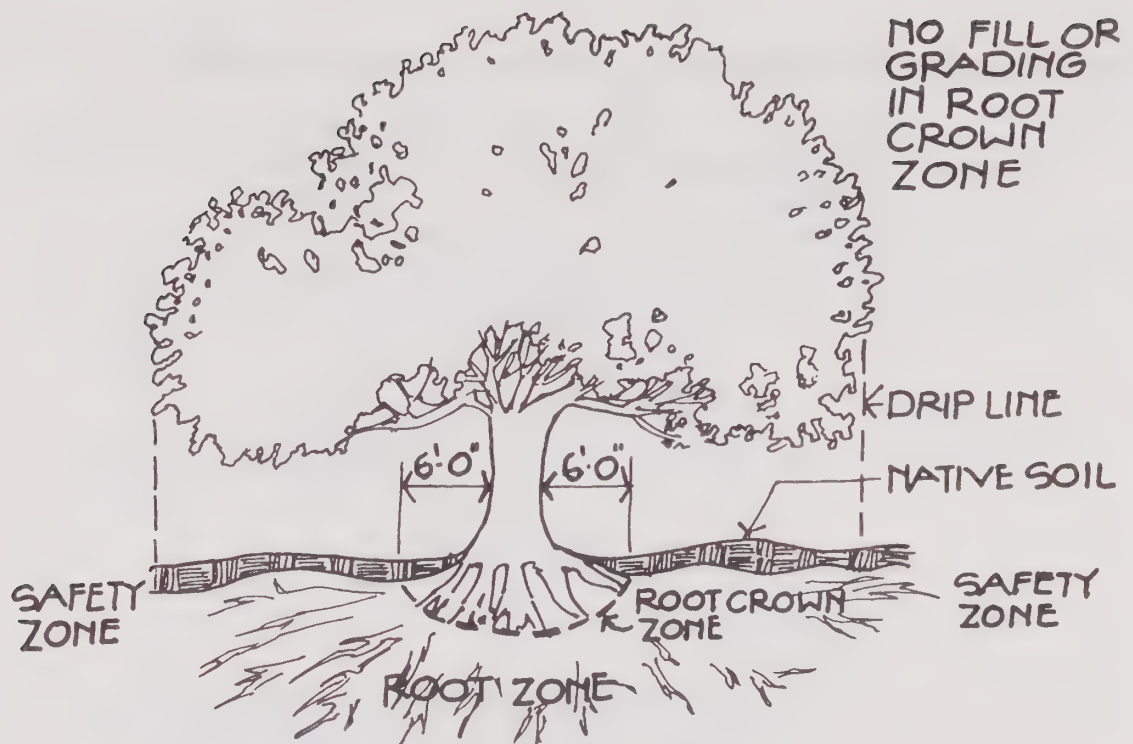
### **3. Techniques for the Preservation of Oak Trees**

- Specimen oak trees may be found at scattered locations on the hillsides and in the valleys and canyons. Special care should be taken to retain and protect oaks as significant resources.
- The most critical issue in the care and maintenance of an existing oak is the altering of conditions under which the tree has grown. “Altering” includes changing the grade within the drip line, changing watering practices from natural rainfall to supplemental irrigation, changing the leaf litter beneath the trees, changing drainage patterns, and the movement of soil around roots caused by heavy equipment.

Should changes of grade be necessary, the following steps may be taken:



- a. Establish the radius of the existing root system by using soil probes or equivalent. This establishes a Root Crown Zone within which there should be no grading. New development may require gradual root pruning. Consult an arborist for proper techniques. Root pruning enables roots to be cut for a lowering of natural grade. Under no circumstances should soil be added around the Root Crown Zone, but soil may be added over the Root Zone if the Root Crown is protected by retaining devices.



- b. Overwatering oaks during the summer creates conditions favorable to root rot and oak root fungus. Besides reducing water to the root zone, draining water off of the root crown quickly is vital for the health of the tree. Sloping soil away from the root crown improves drainage by creating rapid water runoff. In heavy soils, such as clays, leach lines installed within the drip line and extending out to drainage courses may be necessary to increase drainage. In all cases, the goal is to duplicate the native conditions under which the oak has lived. Essentially, if the existing conditions were dry, leave them dry; if they were wet, leave them wet.
- c. Leaf litter is the accumulation of live and decaying leaves at the base of a tree. In the case of oaks, this litter contributes to a cool atmosphere for root growth, and an acid condition resulting from the decaying of the leaves. When possible, and when it poses no fire hazard, leave the natural litter in place.
- d. Poor drainage caused by a change in grade or compaction produces constant moisture at the base of the trunk. Growing lawns beneath oaks also frequently produces poor drainage. This problem can be averted by using other ground covers, sloping the natural grade away from the tree and diverting sprinklers away from the trunk. A dense turf or compacted soil can greatly reduce aeration in the soil. Reduced aeration plus excessive water favors development of harmful soil organisms, such as oak root fungus, which may be present in an inactive stage until stimulated by favorable growing conditions or even mechanical root injury.

- In summary, native oaks are extremely sensitive plants. Minimal grade changes within the drip line can drastically effect aeration of the roots and drainage around the root crown. Avoid changes of grade if possible. Avoid summer irrigation which would produce constant moisture at the root crown.



## IV.A3. Hillside Grading and Drainage

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Changes to the existing natural terrain through grading should be kept to a minimum in order to preserve the inherent characteristics of sloping hillside sites.

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Grading should be kept to a minimum and should be performed in a way that respects significant natural features and visually blends with adjacent properties. Factors to be considered in the development of a grading plan are:

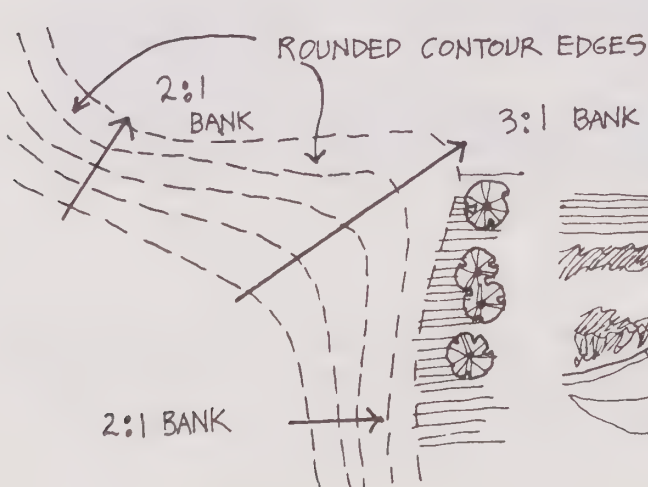
- The natural features of the site.
- Slope and soil characteristics.
- Vegetative cover.
- Access to the site.
- Orientation and visibility of both site and the proposed development.

Detailed geotechnical and hydrologic reports may be required prior to the preparation of the grading, drainage and erosion control plans. Careless grading often results in extensive slope cuts with highly visible scars, unstable slopes, increased erosion and a degradation of the visual hillside character.

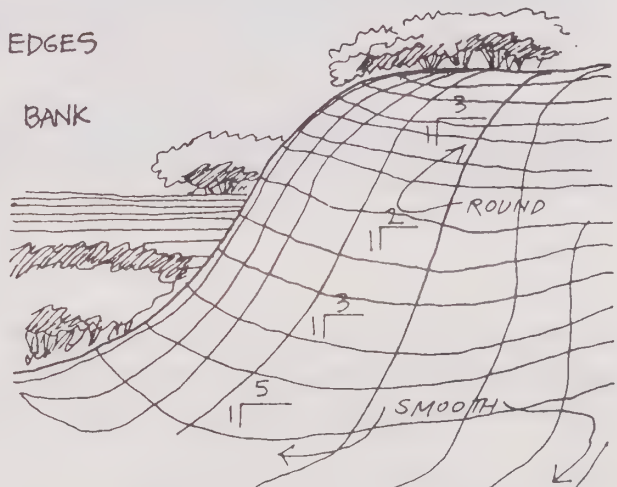
In addition to applying the standards contained in the City's Geotechnical Review Matrix, the City will strongly encourage the following:

## Grading

- Minimize grading at areas with greater than 25% slope (except that required exclusively for foundations). Grading in a small or large hillside residential subdivision project where the slope is over 25% shall be reviewed by the Design Review Board and the Planning Commission to assure that the lot and/or subdivision design complies with this guideline.
- Avoid creating large graded terraces at mid-slope areas for building pads.
- New building sites should be graded such that they appear to emerge from the slope. Minimize creation of flat areas on slopes greater than 25%.
- Avoid hazardous or unstable portions of the site. The City's Geotechnical Review Process will establish the presence and extent of these areas.
- Mitigate geotechnical site constraints when needed so long as it can be proven that the measures do not cause negative visual impact to the natural hillside character.



Variety in slope bank gradients creates a natural appearance more resembling a natural form.



Slope banks can be softened by contoured grading at the top and toe of the slope.

- Avoid a manufactured appearance by creating smooth flowing contours of varying gradients, preferably with slopes of 2:1 to 5:1. Avoid sharp cuts and fills and long linear slopes that have uniform grade.

Slope banks can be softened by contoured grading at the top and toe of the slope.

- Terracing should be designed with small incremental steps, avoiding wide step terracing and large areas of flat pads.
- Pads should be of minimum size to accommodate the structure and a reasonable amount of open space. Pads for tennis courts, swimming pools and lawns are discouraged. As much of the remaining lot area as possible should be kept in the natural state of the original slope.
- Sloping lot designs, such as split level building terraces are encouraged to reduce pad size.
- Grading should be minimized within 20 feet of all perimeter property lines of the development, unless the grading is similar to the existing adjacent slopes or to the planned grading of the adjacent slopes.
- Retaining walls and pony walls visible from off site should be of minimum height. Retaining walls faced with stone or earth-colored materials are encouraged.

### **Drainage**

- Storm water should be collected and conveyed to off-site systems in a manner which will avoid erosion and damage to on-site and adjacent properties.
- Where storm drainage improvements are necessary, they should be designed to create a natural rather than a manufactured appearance.
- On site areas of impervious surfaces should be minimized to reduce run-off.
- Storm water from building roofs should be collected and conveyed to a comprehensive site drainage system.
- When off-site storm drainage impacts are anticipated, hydrology plans should be developed with input from neighboring property owners and submitted to the City with the proposed site development plans.



Use of natural materials in man-made drainage channel.

- Drainage devices such as terrace drains, benches or downdrains should be placed in locations of least visibility on slopes. The side of a drain may be bermed to conceal it. Natural swales leading downhill are a good location for downdrains. Visible concrete drains should be color tinted and screened with planting to be less obtrusive.
- Runoff and Subsoil Discharge. Passage for bulked-flow and subsoil runoff shall be provided to a safe point of discharge, such as a street, channel or debris basin, in a manner such that damage to improvements or slopes will not result. Natural stream gradients should not be flattened.
- Debris Collection. Where applicable, lot designs and the location of proposed improvements shall permit accommodation of debris from potential land slippage and/or erosion without damage to improvements or other properties downslope, and with access to a street to provide for cleanup and removal.
- Overflow Route. An emergency overflow route for flood and debris flows which exceed the design capacity of planned drainage, flood control and debris facilities and devices shall be provided. Overflow routes shall direct overflows away from slopes and improvements and toward safe points of discharge.

## Erosion Control

- Where applicable, grading plans should include erosion control and revegetation programs. Where erosion potential exists, hydro-seeding, silt traps or other engineering solutions may be required.

- The timing of grading and construction should be controlled to avoid failure during construction. Detention basins and other storm and erosion control facilities may be required. If this is the case, the negative visual impact to the natural hillside character must be evaluated and judgement made as to the appropriateness of erosion control facilities.

### **Geologic Hazards**

- Geotechnical Review is required on all sites to identify hazardous areas, including debris flows.
- Areas determined through the geotechnical Review Process to be too hazardous for development shall be avoided.
- The following methods for mitigating geologic hazards are **not acceptable**:
  - Major modifications that would change the character of an existing landform.
  - Exposure of slopes that cannot be suitably re-vegetated.
  - Removal of large areas of existing mature vegetation that substantially contribute to the natural character of a site.
- Existing geologic hazards shall be corrected when they pose a threat to on or off site development.



## IV.A4. Lot Configuration, Building Setbacks and Locations

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The layout of lots in a residential development should be imaginatively derived from the form of the land. The development plan should adapt to existing topography and natural features, avoiding unnecessary alteration of land forms.

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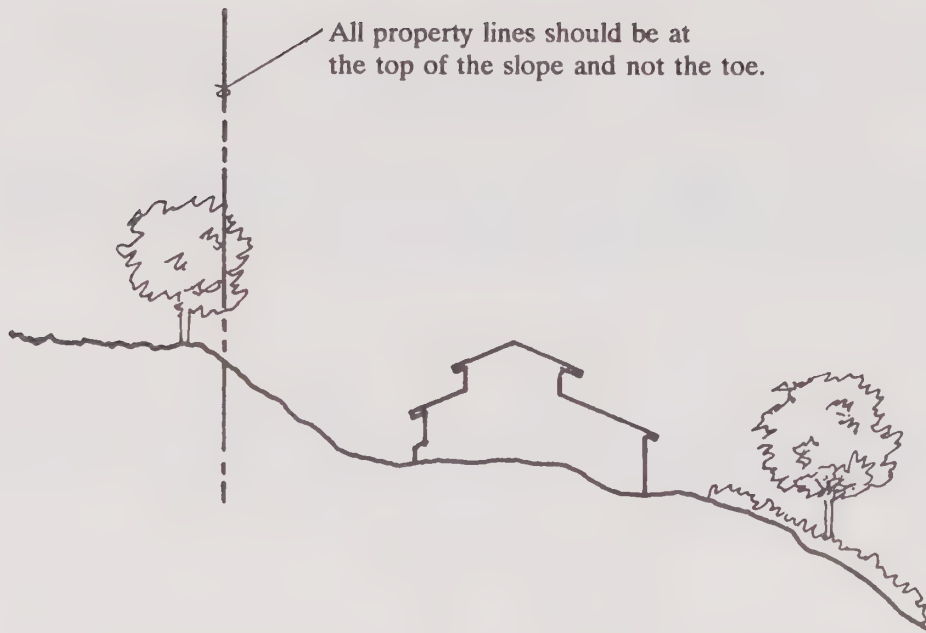
The visual prominence of hillside residential development should be minimized by taking advantage of existing site features for screening such as tree clusters, depressions in topography, setback hillside plateau areas and other natural features.

### Lot Configurations

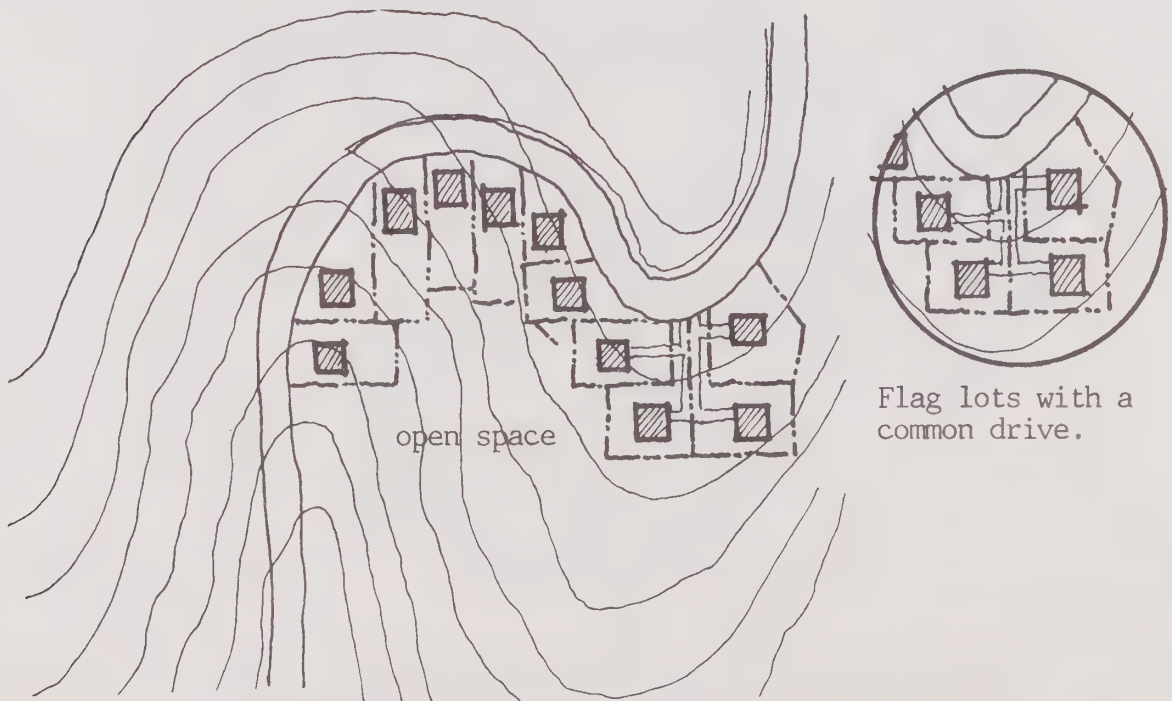


Variety of lot patterns influenced by Topography and Natural Features.

- Lot Patterns which offer a variety of lot shapes influenced by topography and natural features are encouraged.



- Lot lines should be placed at the top of major slope areas within areas of high public visibility to ensure that the slope maintenance and planting will not be neglected by the uphill owner.

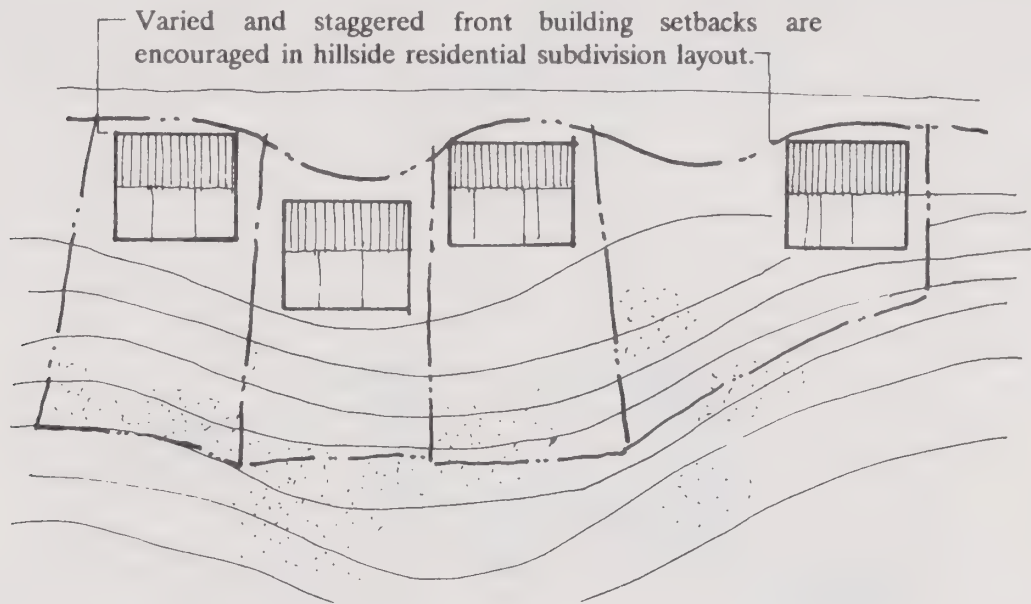


Example of the appropriate use of flag lots.

- Allow flag lots with parking located to adjacent roadways to encourage terracing of buildings while minimizing roadway cut and fill.

## Building Setbacks

- Allow front and side setback requirements to be flexible (including zero lot line conditions) subject to Environmental and Design Review, to promote clustering of buildings if this will protect an existing slope.



- Varied and staggered front building setbacks are encouraged in hillside residential subdivision layout. This is consistent with the natural hillside character and will reduce the monotony of repetitive setbacks.

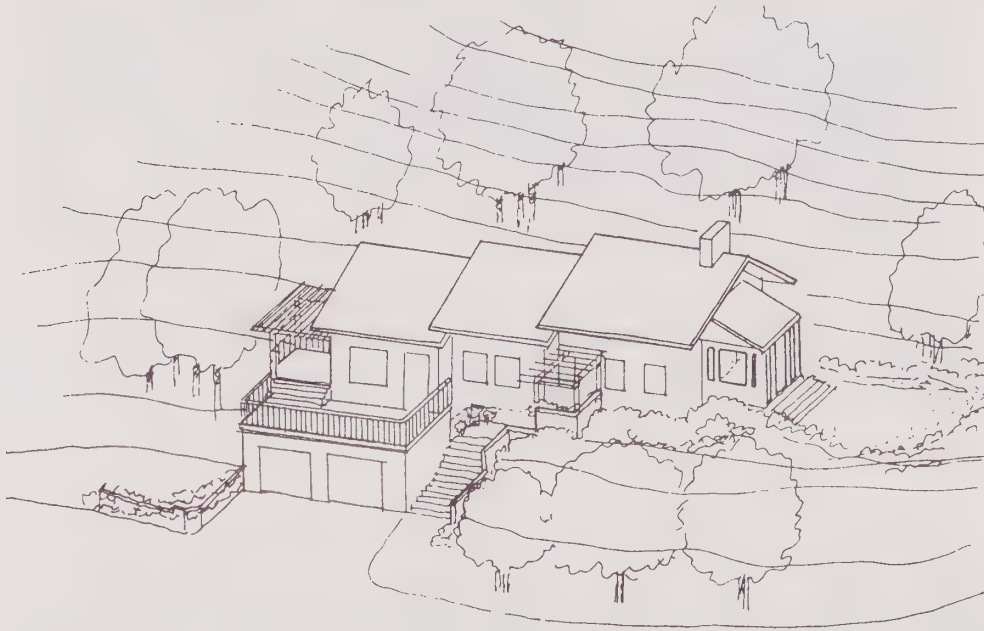
The amount of setback variation will depend upon lot size. Residential development at a density of 2 dwellings per acre should vary adjacent setbacks by at least 10 feet; lots one acre or larger should vary adjacent setbacks by at least 20 feet.

In order to review proposed setbacks, building pad locations should be indicated on grading plans submitted with Tentative Maps, Parcel Maps, Site Plans and Major Use Permits pertaining to hillside residential development.

## Building Locations

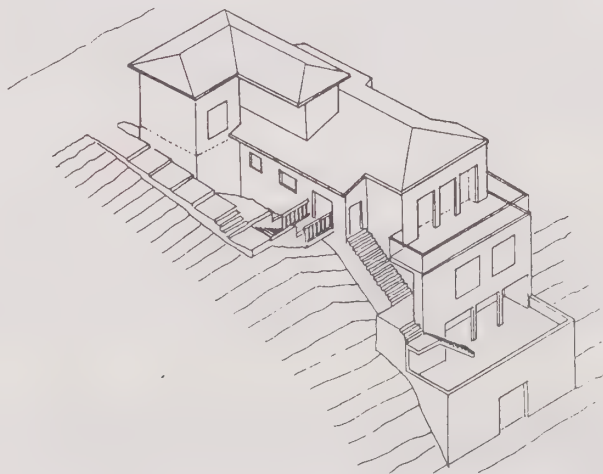
- Buildings should not be located near visually prominent ridgelines when a choice of building location is available. Building rooflines must be located below the ridgeline so that views to the hillside retain the natural ridgeline. See Guideline C1, "Highly Visible Ridgeline Areas."
- All new hillside residential development should be located so as to minimize interference with views from adjacent residences.

- Do not locate new hillside residential development near the highest point of a property if it will obscure long distance views from adjacent residences.
- Taller structures which better utilize an uphill placement, because of the setback from the downslope edge provided by the road right of way, shall be considered with Design Review Board approval.



Example of Uphill Placement of Structure

- Downhill placement shall minimize front yard setback to reduce building mass hanging over the slope. Building bulk shall step back with the slope. See Guideline Ab, “Reduction of Building Bulk on Hillsides.”



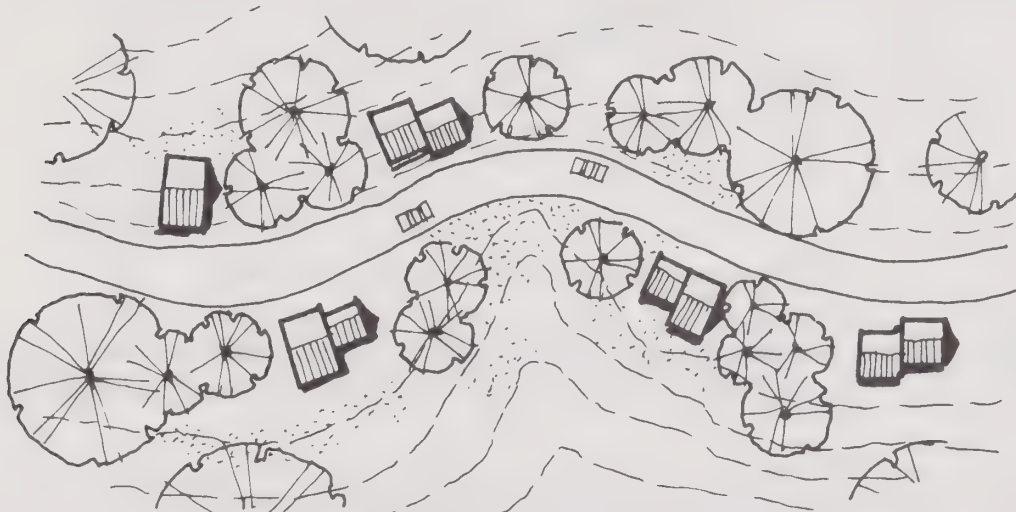
Example of Downhill Placement of Structure

## IV.A5. Street Layout, Driveway and Parking Design

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Streets, drives, parking and emergency vehicle access should be aligned to conform, as closely as possible, to existing grades and minimize the need for the grading of slopes. They should not greatly alter the physical and visual character of the hillside by creating large notches in ridgelines or by defining wide straight alignments on hillsides. Natural land forms may often be retained by introducing gentle horizontal and vertical curves in road alignments.

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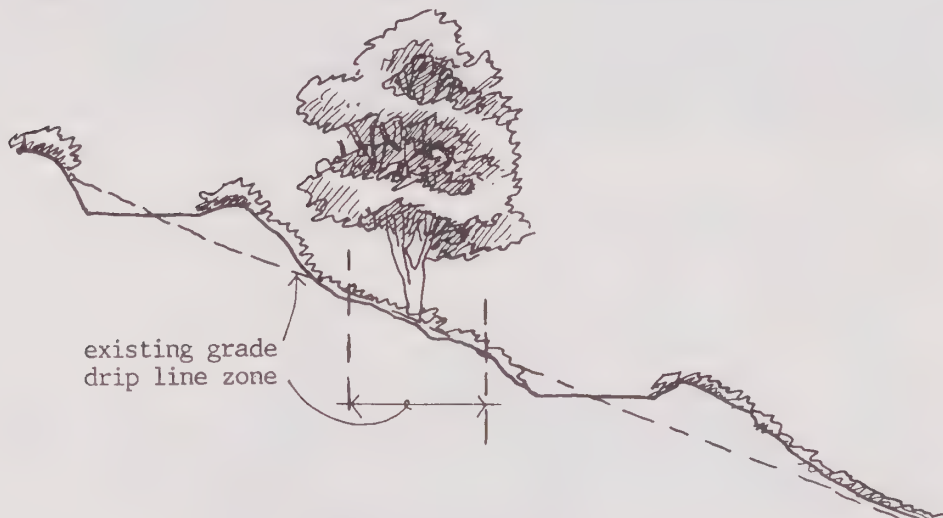
Street layout shall be aligned to conform to the natural grades as much as possible. Long stretches of straight road should be avoided by introducing gentle horizontal and vertical curves.

### Street Layout

Where street construction is permitted in hillside areas, the extent of visual disruption of the terrain and vegetation disturbance must be minimized by the combined use of retaining structures and regrading to approximate the natural slope. The following techniques should be used:

- Use narrower street widths (acceptable to the City Engineer, Fire Chief, and other City Departments) when it can be proven that it will reduce grading impacts and it can be shown that the topography of the small number of lots served and the probable future traffic development is such that it justifies narrower widths and that safety will not be compromised. Minimum pavement width for public streets is 26 feet.
- Reduce the visual and safety impacts of hillside street design by use of terraced retaining walls and landscaping.

- Split roadways increase the amount and appearance of landscaping and the median can be used to handle drainage. Split roadways also allow the integration of natural features such as specimen trees and rock outcroppings into the street design. Split roadways, depending on their length, can impact Fire Department response times.

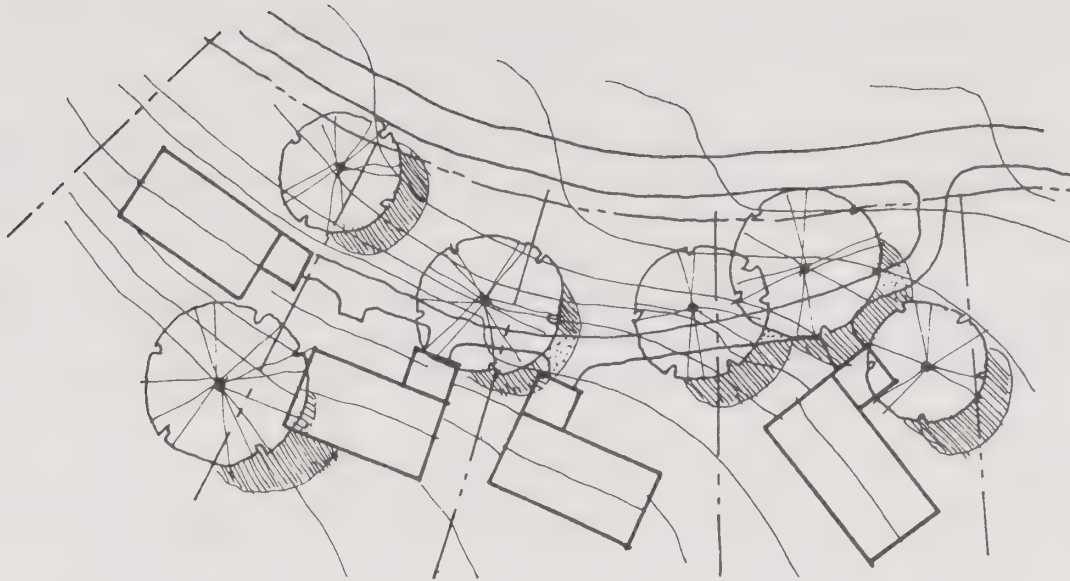


Split roadways on steep hillsides where appropriate.

- Street layout shall be aligned to conform to the natural grades as much as possible. Long stretches of straight road shall be avoided by utilizing gentle horizontal and vertical curves.
- Proper sight distances shall be maintained; and, with approval by the City Engineer, three-way intersections at angles less than 90 degrees shall be considered to reduce grading requirements.

### Driveways

- Driveway grades up to a maximum of 18% are allowed unless the Design Review Board, Fire Department, and the City Engineer find good cause for exception, and shall be aligned with the natural contours of the land. The finished grade of driveways shall conform to the finished grade of the lot. Proper design consideration shall be given to vertical curves and parking landings. In any case, parking landings shall be required on all drives over 10%.
- On substandard streets, 2 guest parking spaces shall be provided (not on the driveway apron). These spaces should be conveniently placed relative to the dwelling unit which they serve. This requirement may be waived when the size or shape of the lot or the need for excessive grading or tree removal make the requirement infeasible.
- Driveway and parking designs that force vehicles to “back out” into substandard roadway widths are prohibited.



Grouped driveways can reduce grading.

- Common drives in single family hillside residential developments should be considered if grading is reduced by their use. Common easement maintenance agreements are required for common driveways.
- Any street or driveway over 18% and up to a maximum of 25% shall have Design Review Board, Public Works Department and Fire Department approval as an exception to existing standards. This exception will be based on the following criteria:
  - Will the exception protect views?
  - Will the exception minimize grading and tree removal?
- Grooves for traction should be incorporated into the construction of driveways with a slope over 18%. Asphalt driveways are not allowed on driveways with slopes over 15%.

## Parking

- On-street parking should be provided in parking bays where topography allows.
- When allowed, parallel parking should be located on one side only and be limited to 8 feet in width.



## IV.A6. Reduction of Building Bulk on Hillsides

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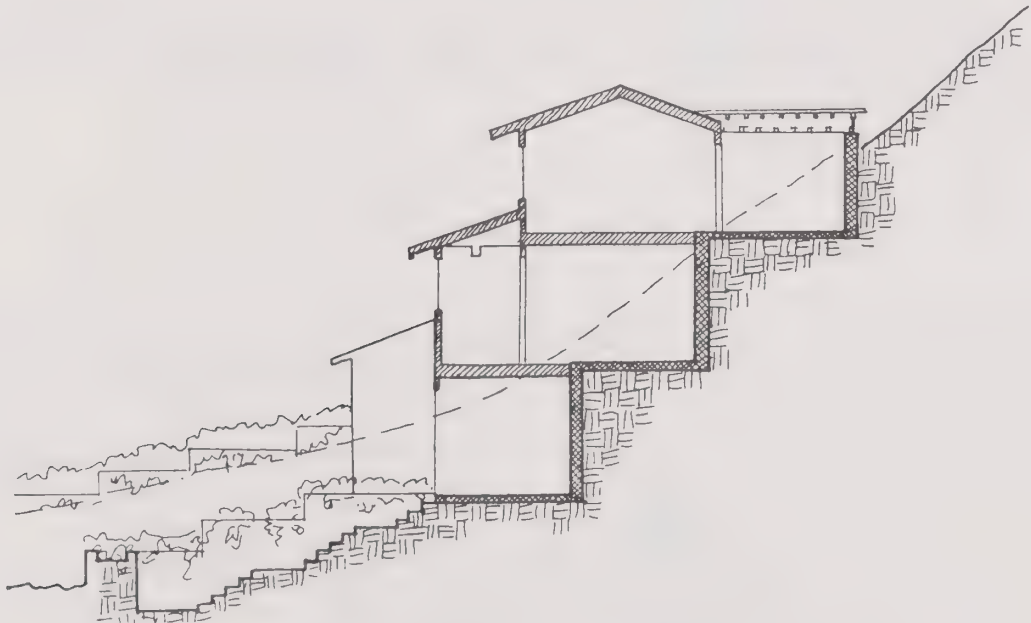
The effective visual bulk of hillside residential development should be reduced so that structures do not “stand out” prominently when seen from a distance or from downhill properties.

Building form should be designed to conform to the site topography. The form, mass, profile and architectural features of the individual buildings should be designed to blend with the natural terrain and preserve the character and profile of the slope.

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Reduction of building bulk on hillsides can be achieved by the following techniques:

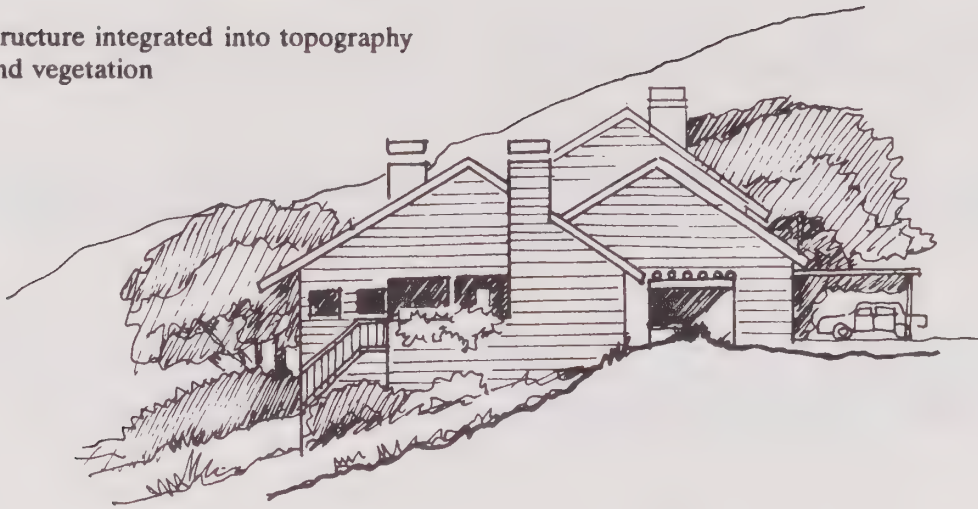
- Avoid multi-story buildings on ridgeline lots.
- Split pads, stepped footings, pier and grade beam foundations to permit the structure to step up the slope. Avoid large single form structures.



Cut buildings into hillside to reduce effective visual bulk.

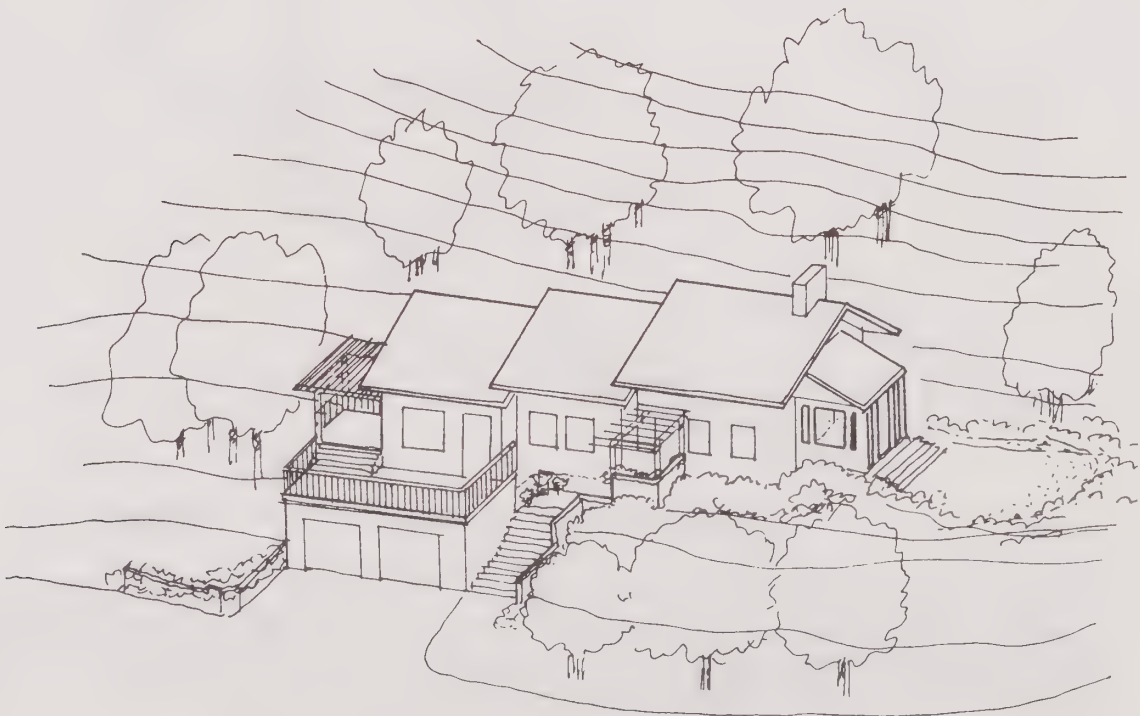
- Cut buildings into the hillside to reduce effective visual bulk. Excavate underground or use below grade rooms to reduce effective bulk and to provide energy efficient and environmentally desirable spaces. The visual area of the building can be minimized through a combined use of regrading and landscaping techniques.

- Structure integrated into topography and vegetation



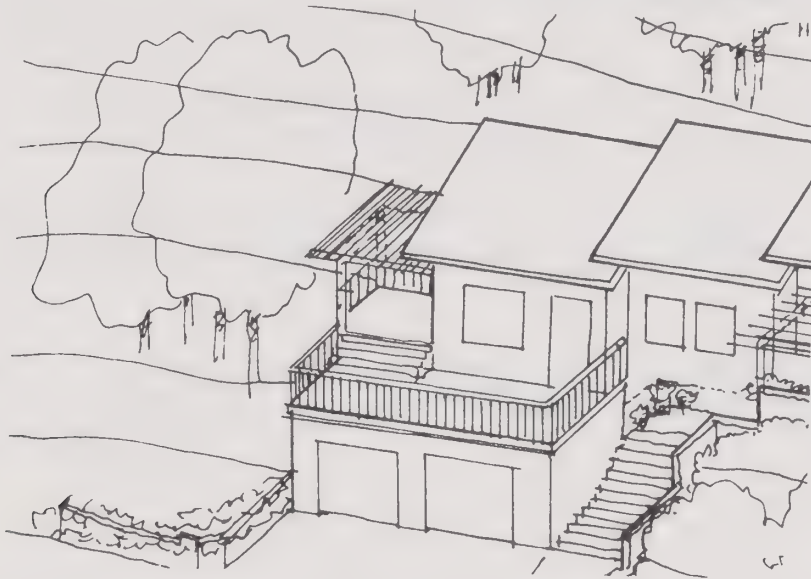
- Roof forms pitched to follow slope.
- Forms broken to reflect irregular forms of hills.
- Materials and colors blend into surroundings.
- Select materials for fire resistant characteristics.

- Roof forms and roof lines should be broken into a series of smaller building components to reflect the irregular forms of the surrounding natural features. Long, linear unbroken roof lines are discouraged.



Roof forms and rooflines should be broken into a series of smaller building components.

- Avoid the use of large gable ends on downhill elevations. The slope of the roof should be oriented in the same direction as the natural slope and should not exceed the natural slope contour by 20%.
- Avoid excessive cantilevers or overhangs on downhill elevations.
- Detach parts of the dwelling such as the garage.



Detached garage with rooftop deck.

- Use roofs on lower levels for the deck open space of upper levels. Terraced decks do not increase building bulk when seen from downhill lots.
- Avoid using overhanging decks or decks elevated on poles that make buildings seem more massive from downhill lots.

- Avoid large expanses of a wall in a single plane on downhill elevations. Use horizontal and vertical building components to effectively reduce the bulk of hillside residential development.
- Building materials and color schemes should blend with the natural landscape of earth tones and natural woodland or grassland vegetative growth.
- Avoid large retaining walls in a uniform plane. Break retaining walls into smaller components and terraces.

## IV.A7. Hillside Architectural Character

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San Rafael's Hillside Residential Architecture should develop a semi-rural character with a strong relationship to the natural setting. New buildings should incorporate the following elements and characteristics:

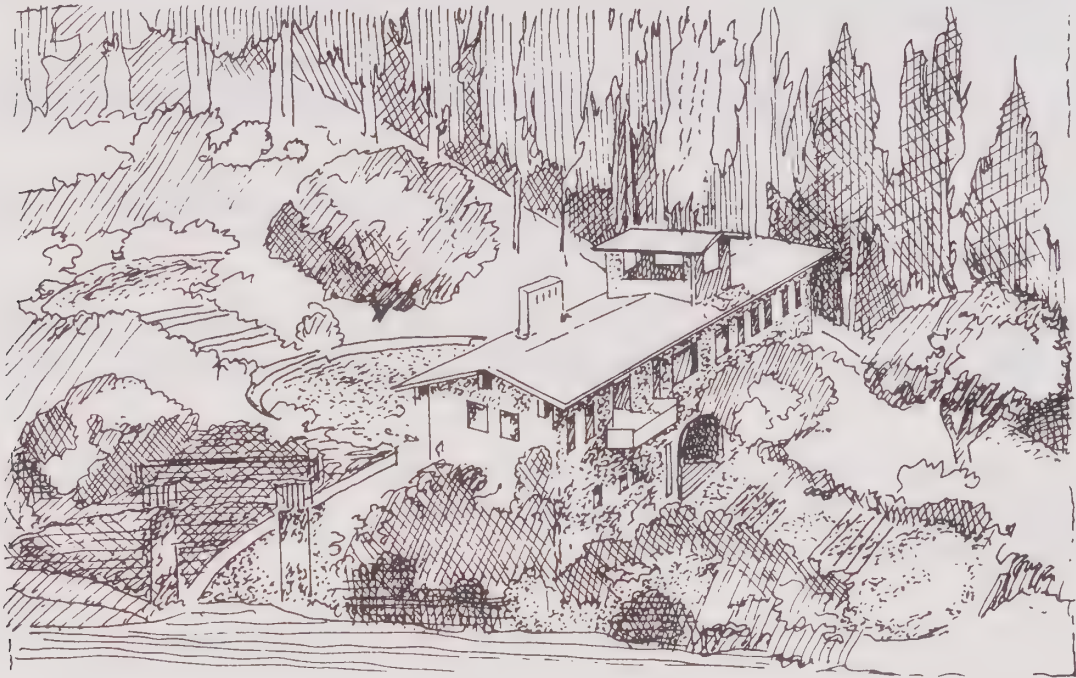
- Simple one and two story buildings in recessive colors with pitched roofs, accented with appropriate architectural features.
  - Building and roof forms should be “broken” into compositions of smaller components to reflect the irregular forms of the hillside setting.
  - Building forms should be “stepped” to conform to the site topography. Extensive use of rooftop terraces at lower stories, verandas, and other defined outdoor spaces are encouraged.
  - Strong shade and shadow patterns created by careful variation of planes in building elevations. Large cantilevered projections and large overhangs are discouraged on downhill elevations.
- 

Hillside Residential Architecture in San Rafael should reflect the character of the city's landscape and climate. While no one architectural “style” is desired, architectural elements that are characteristic of rural buildings are preferred. The use of porches, courtyards, verandas, sloping roof forms and natural materials are encouraged.



## 1. Building Form

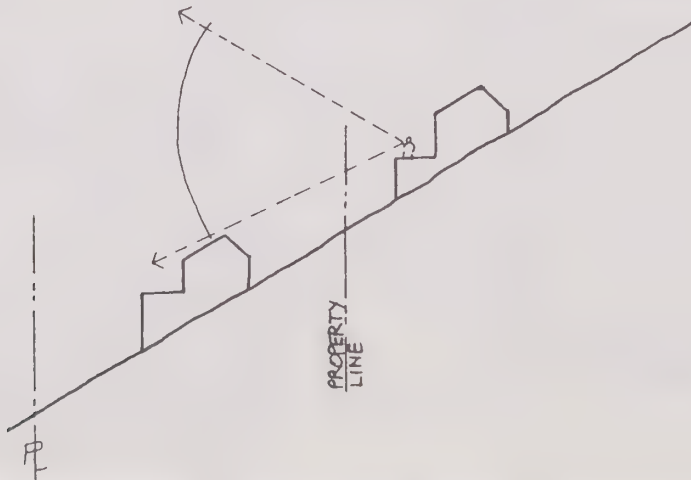
New Hillside Residential Architecture in San Rafael should continue the dominant pattern of one and two story buildings with tree canopied spaces around them.



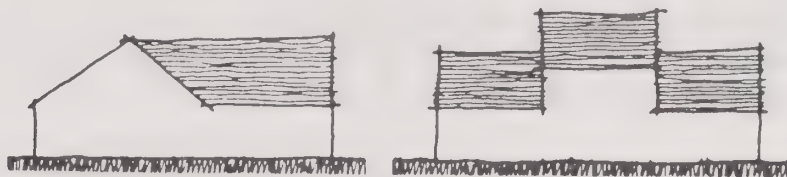
- The visual contrast between areas of light and shadow gives buildings depth and substance. All buildings should have shadow relief created by modest overhangs, minor projections (greater on uphill elevations), recesses and plan offsets. Large unbroken expanses of wall should be avoided.

## 2. Roof Forms and Plan Offsets

Give careful considerations to views of rooftops from other hillside areas, adjacent roads and uphill properties.



Gabled, hip and shed roof forms at a low to moderate pitch are encouraged. Moderate overhangs on downhill elevations to create strong shadow lines are desirable. For sloped roofs, long unbroken roof lines should be avoided. Changes in roof pitch orientation should be accompanied by plan offsets on primary elevations.



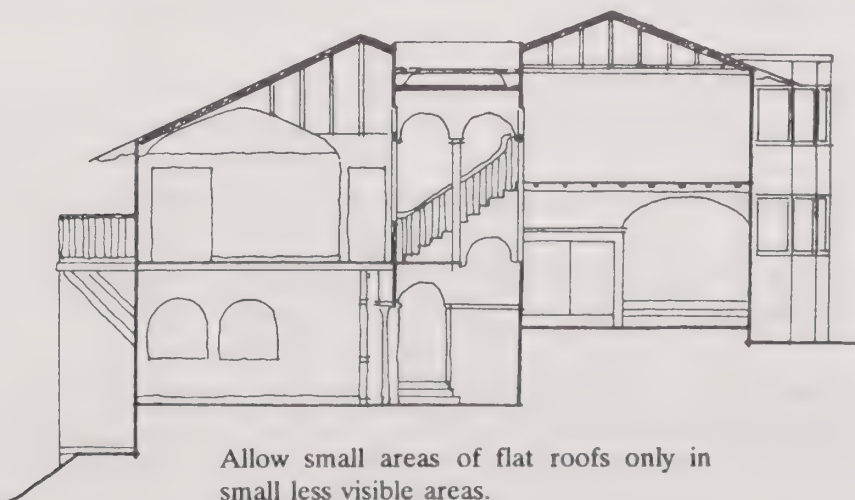
NOT ACCEPTABLE



ACCEPTABLE

A large building's bulk may be reduced by breaking the roof form into smaller parts, reflecting the irregular forms of the surroundings. There should be a consistency of roof pitch and design among separate roof components. Abrupt changes in eave heights require plan offsets to make transitions between building components.

Flat roofs that require membrane or built up roofing materials are discouraged except in small and non-visible areas or when approved by the Design Review Board.

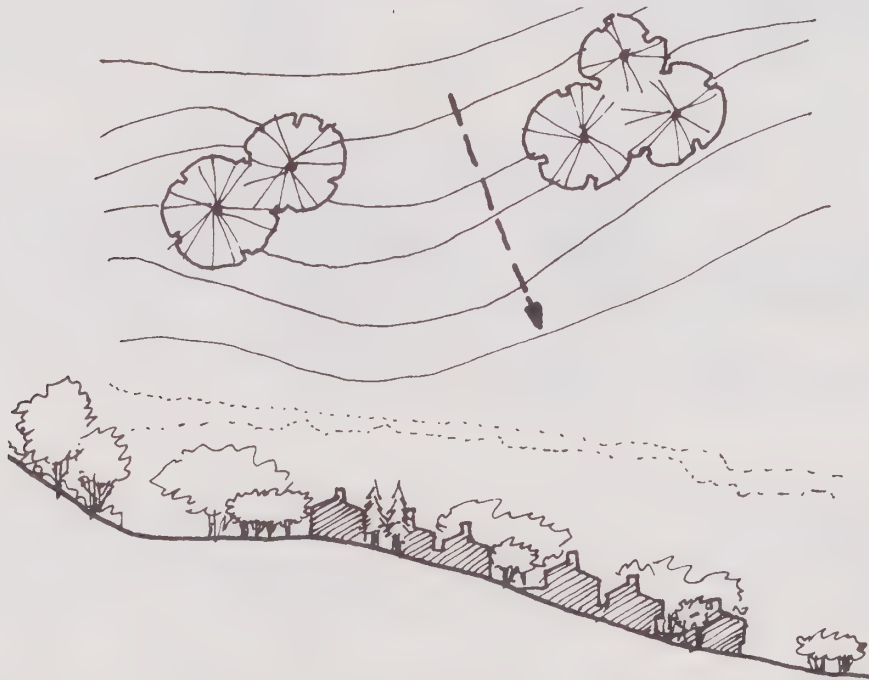


### 3. Multi-Building Projects

Most sloping sites large enough for multi-building projects are highly visible from distant locations. Views from the site from the neighborhood and other off site locations should be given strong design consideration.

Multi-building developments should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation. Other techniques for reducing the visual impact of multi-building projects are:

- Site buildings with different floor elevations to achieve height variation.



Site units or buildings with different floor elevations to achieve height variation.

- Buildings located near hillside rims have higher visibility. These buildings should be sited in a staggered arrangement and screened with planting to minimize a “wall” effect.
- Avoid long, continuous building masses that create a “wall” effect and inhibit views.
- Facades should be articulated to produce shadows through wall setbacks, recessed openings, porches, verandas, moderate overhangs, projecting windows.
- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillside sites.

#### **4. Building Materials, Texture and Color**

Color selection should show evidence of coordination with the predominant colors and values of the surrounding landscape. This is to minimize contrast of the structure with its background when viewed from the surrounding community.

Roof colors should tend toward darker earthtones. Darker colors are less conspicuous when viewed from a distance.

a. The following building materials are encouraged:

- Exterior Walls
  - Wood siding (fire resistance is an important consideration here).
  - Exposed wood structural members.
  - Natural colored brick or stone masonry.
  - Natural colored cement plaster.
- Roofs
  - Fire resistant wood shakes with thick butts, with Fire Department approval.
  - Flat Concrete Shingles of earthtone color.
  - Flat Clay Tile of earthtone color.
  - Composition shingles (with thick butts) of earthtone color.

b. The following materials are discouraged:

- Exterior Walls
  - Large areas of glass.
  - Reflective glass.
  - Plastic materials made to resemble masonry or stone.
  - Wood shingles and shakes.
- Roofs
  - High contrast or bright colors.
  - Built up roofing, if seen from above, except in small areas.
  - Highly reflective or shiny materials.
  - Non-fire resistant materials.

#### **5. Walls, Fences and Accessory Structures**

- Fences, walls and accessory structures should be designed to be compatible with adjacent buildings. Patio covers, greenhouses, storage spaces and other ancillary structures should be located and designed to respect views and other special conditions of highly visible

sites.

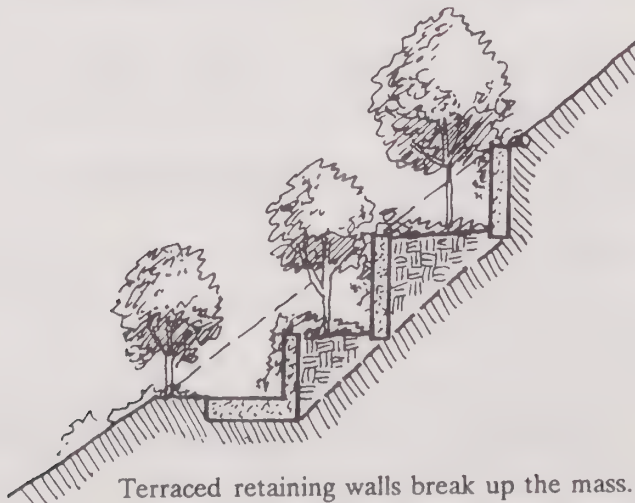
- Solid fences and walls along public streets have a negative impact on the streetscape and surrounding neighborhoods. Open fence design is encouraged on public streets in hillside areas to emphasize opportunity for views from the public environment.
- Fences and walls over 3 feet in height that face public streets should provide a fully landscaped buffer at least 5 feet deep on the street facing side of the fence or wall.

The following wall and fence materials are encouraged:

- Colored concrete.
- Split-faced concrete masonry in natural colors.
- Stone and brick masonry.
- Walls with natural colored cement plaster finish.
- Wood.
- Detailed Wrought Iron (for use in gates, and other small areas).
- Open wire fencing (with Design Review Board approval).
- Iron bar fencing.

The following wall and fence materials are discouraged:

- Chain link or open wire, except when heavily screened by planting.
  - Corrugated Metal.
  - Bright colored plastic or plastic coated materials.
  - Reed Materials.
- Retaining walls associated with lots are limited to:
    - a. Upslope (from the structure) walls not to exceed four (4) feet in height (unless approved by the Design Review Board). Terraced retaining structures may be utilized which are separated by a minimum of three (3) feet and appropriate landscaping.



Terraced retaining walls break up the mass.

- b. Downslope (from the structure) walls not to exceed three (3) feet in height unless approved by the Design Review Board. Where an additional retained portion is necessary due to unusual or extreme conditions (such as lot configuration, steep slope or road design), then the use of terraced retaining structures shall be considered on an individual lot basis. Terraced walls shall not exceed three (3) feet in height.
- Free standing wall setbacks along front yards shall be varied to avoid creating an unbroken, uniform streetscape. The height of such walls shall not exceed 4 feet unless approved by the Design Review Board.
- Where fences and walls occur on privately-owned property within slope areas, fence/wall designs shall be as uniform as possible.
- Continuous rear yard fences and walls across the tops of slopes shall be coordinated in design and use of materials.
- Wall setbacks on slopes shall not allow more than four feet of solid wall or fence to show above the sight line projected along the slope angle.



Several small retaining walls can be screened.

- Retaining walls shall be designed with smooth, continuous lines that conform to the topography. Maximum wall height at the base of slopes along roadways shall not exceed 4 feet in order to avoid a contained, channel-like effect.
- Retaining wall structures holding back grade to accommodate a patio or terrace shall conform to the natural hillside profile as much as possible. Excessively high retaining walls are prohibited.
- In deck construction, the distance between structure and grade shall conform to the natural hillside profile as much as possible. Excessively high distances between structure and grade are prohibited.

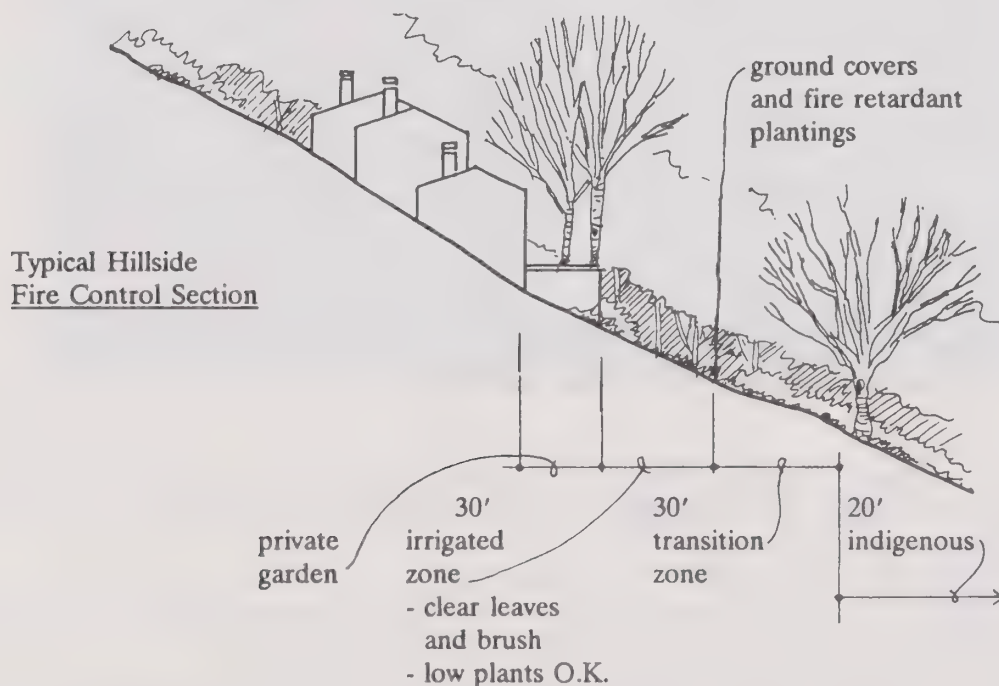
## **6. Mechanical Equipment**

- No mechanical equipment, including solar collectors, television antennae and satellite dishes shall be exposed to view from beyond the boundaries of the site unless fully screened or architecturally integrated with a structure. Overhangs, roof eaves, decks, foundations and all other elements projecting from any downslope wall shall be designed so that there is no exposure of plumbing, heating, ventilating and air conditioning equipment or conduit, and shall be of an architecturally finished appearance.
- Site lighting fixtures should be selected or designed to compliment the architectural design of the project.

## IV.A8. Planting Design for Hillside Residential Development

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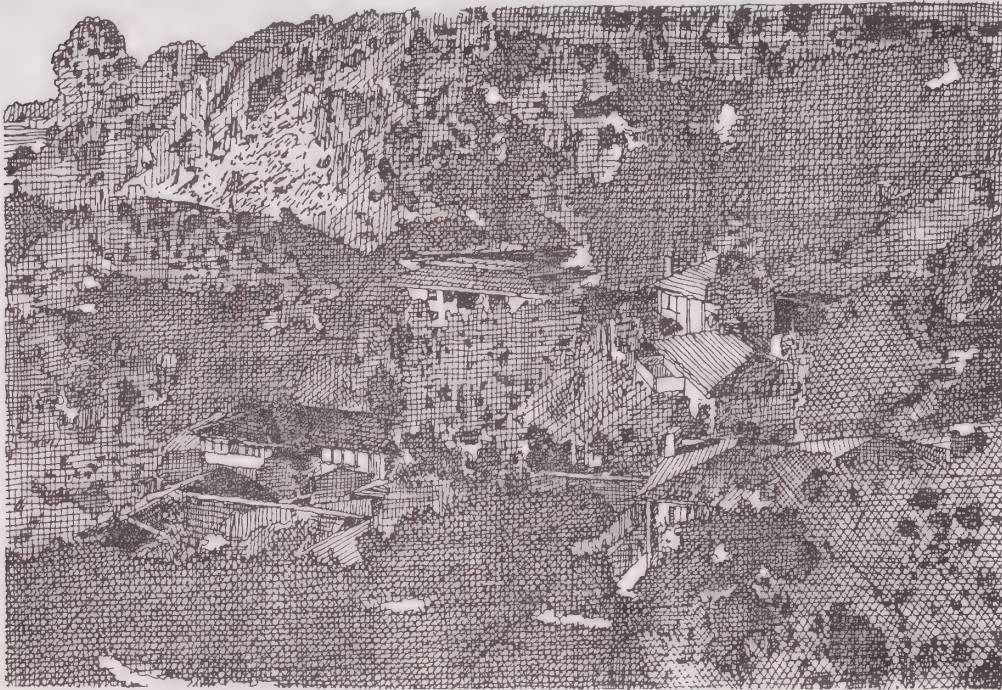
- Planting design should reflect the hillside character of the San Rafael landscape.
  - Protect ridgelines, open hillsides, canyon and riparian areas.
  - Plant selection should recognize the importance of water conservation, fire resistance and erosion control. Emphasize drought tolerant native plant species.
  - Use hillside planting design to effectively buffer existing hillside residential neighborhoods from the impacts of new hillside development projects.
- 



### 1. Design Concepts

- Reinforce the dominant planting patterns that define the oak savannah, oak woodland, canyon and riparian habitats of San Rafael's hillside areas.
- The Hillside Resource Residential and Hillside Residential Areas as designated in the General Plan are "impact sensitive" areas for minimum development. They define and provide a backdrop to the City. Plantings on the undeveloped hillsides should be native California vegetation indigenous to the area. New plantings in the developed areas may be introduced species which can acclimate to the site conditions. See Appendix B, "Plant Selection Guide." The goal is to strengthen the natural character of the hillside areas.
-

- The pattern of woodland, grassland savannah, native scrub and oaks that define the hillsides unify and give strong identity to the hillside areas of the City. Efforts should be made to retain existing tree groupings and specimen trees to incorporate them into new development. When tree groupings must be removed, hillsides could be replaced with irregularly grouped tree species that have a similar appearance when seen from a distance.



- Major rock outcroppings and areas of existing mature vegetation should be preserved. Buildings, roads, and developed yards should be located to minimize disruption of these features.
- b. New plantings on San Rafael's hillsides should be drought tolerant.
- All new plantings should be able to withstand a summer with restricted irrigation after an establishment period of two years.
  - Turf grasses, shallow rooted ground covers and high water using trees and shrubs are discouraged.

## 2. Plant Selection

Appendix B. "Plant Selection Guide" at the end of this manual lists suggested plant species and their recommended uses.

Plants have been chosen based upon the following criteria:

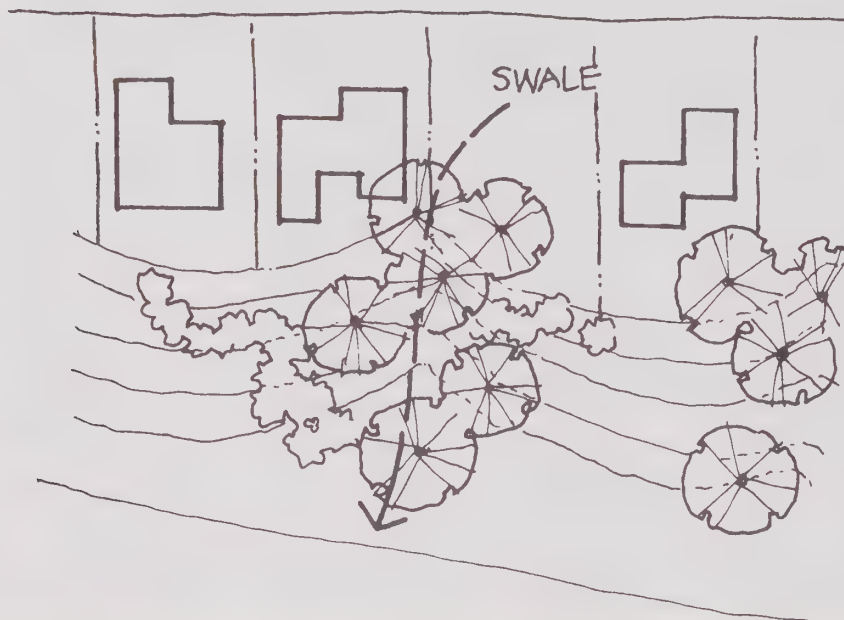
- Appropriateness for San Rafael's climate zone.
- Drought resistance.
- Form considerations: height, branching patterns, density.
- Maintenance.
- Aesthetic considerations: flowering, fruiting, leaf color.

### **3. Planting Guidelines**

- All Planting plans are encouraged to conform to the Marin Municipal Water District Code, Title 13, Ordinance 285 (modified for dry years by Ordinance 316) - "Water Conservation Program."
- All landscaped areas shall have irrigation systems capable of sustaining good plant growth. Automatic systems are encouraged.
- All planting beds shall be mulched with an organic mulch of at least 1.5 inches in depth.
- Shrubs are preferred over ornamental ground covers and lawns due to their low water use characteristics. Shrubs are more deeply rooted than ground covers and turf grasses and will withstand drought conditions better.
- When existing trees are to be retained, they may be counted toward tree planting requirements established in the Zoning Ordinance or other City standards. New planting requirements may be further adjusted to reflect the size and density of existing trees and shrubs.
- Revegetate scarred or graded areas that have high visibility from the community.
- On slopes of 2:1 or greater, plant materials with deep rooting characteristics should be selected that will minimize erosion and reduce surface runoff. The planting basin should be kept level with a raised berm around the base of the plant to help retain moisture. A series of low retaining walls, with sub-drain lines, will provide increased planting area on the slope. This will also reduce runoff and potential erosion.
- **Internal Slope Plantings.**  
Internal slopes that exist within newly developed projects do not blend into native areas, as do transitional slopes, and will be planted with a plant palette made up of mostly introduced species. The following principles are recommended for internal slopes:
  - a. Establish gradient of new slope and determine erosion control requirements.
  - b. Fulfill erosion control needs with water-conserving plant material.
  - c. As a general rule, use water conserving plant species.

- **Planting Techniques for Graded Slopes.**

Use irregular plant spacing to achieve a natural appearance on graded slopes. Plant trees along contour lines in undulating groups to create grove effects which blur the distinctive line of the graded slope. Shrubs of varying height may be planted between tree stands. Ground covers of native and introduced species are appropriate for slope erosion control.



When possible, locate trees in swale areas to more closely reflect natural conditions and gather surface runoff for plant irrigation.

- **Common Areas.**

Common Open Spaces and landscaped areas maintained by Homeowners Associations are subject to review under this guideline. Provisions of this guideline are recommended for planting on single family lots not subject to Design Review. Open space easements may be required to protect sensitive lands, consistent with the policies of the *San Rafael General Plan 2000*.

#### **Hillside Plant Selection.**

Plant materials should be selected for their effectiveness of erosion control, fire resistance and drought tolerance.

Hillside plant selection should consider neighbors' views and observe the following

principles:

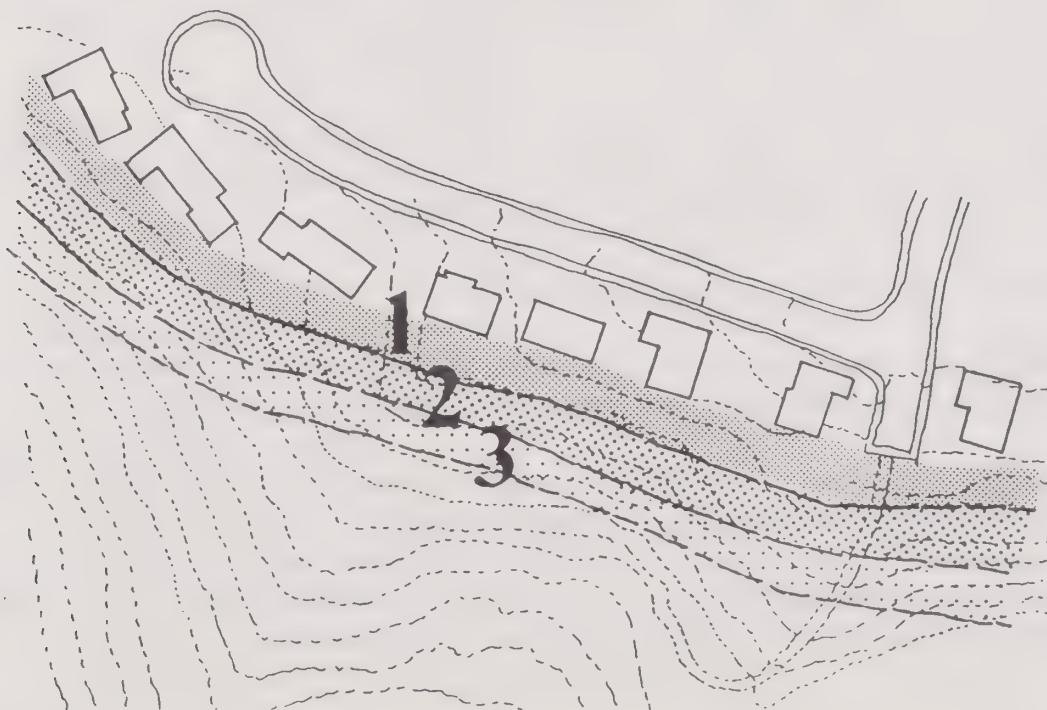
- Where views have been established, follow the downhill alignment of taller trees.
- Use less dense, open trees that provide shade but do not block views.

#### **4. Public Rights-of-Way**

All public Rights-of-Way areas between a newly developed property and the existing sidewalk or street edge should be fully landscaped. Certain species of trees may be planted in street rights-of-way with Public Works Department approval.

#### **5. Planting for High Fire Hazard Areas**

- High fire hazard areas include undeveloped canyons, grassland and woodland hillsides where native vegetation has become overgrown. Development within or on the fringes of these areas is subject to wildland brush fires.
- A transition between ornamental landscaping and native vegetation may be created by selective pruning and thinning native plants and revegetation with low fuel volume plants. Such a transition reduces the readily flammable fuel which spreads fire into developed areas.



- Transition areas can be divided into three distinct zones. The following dimensions are recommended, but subject to Fire Department approval:

- Zone #1: Minimum 30 feet wide. Native or ornamental non-native species which are fire retardant.
  - Zone #2: Minimum 30 feet wide. Native vegetation which should be selectively pruned and thinned, with introduced fire retardant plantings. Plants with high fuel volume are discouraged in this zone.
  - Zone #3: Minimum 20 feet wide. Native vegetation which should be selectively pruned and thinned. Plants with high fuel volume are discouraged in this zone.
- A biologist's report is required that classifies portions of the site by their degree of risk to plant communities from Wildland Fires.
  - Building Envelopes should be located so as to minimize risk to structures due to Wildland Fires.

See Appendix B. for a list of fire retardant plantings suitable for high fire hazard areas.

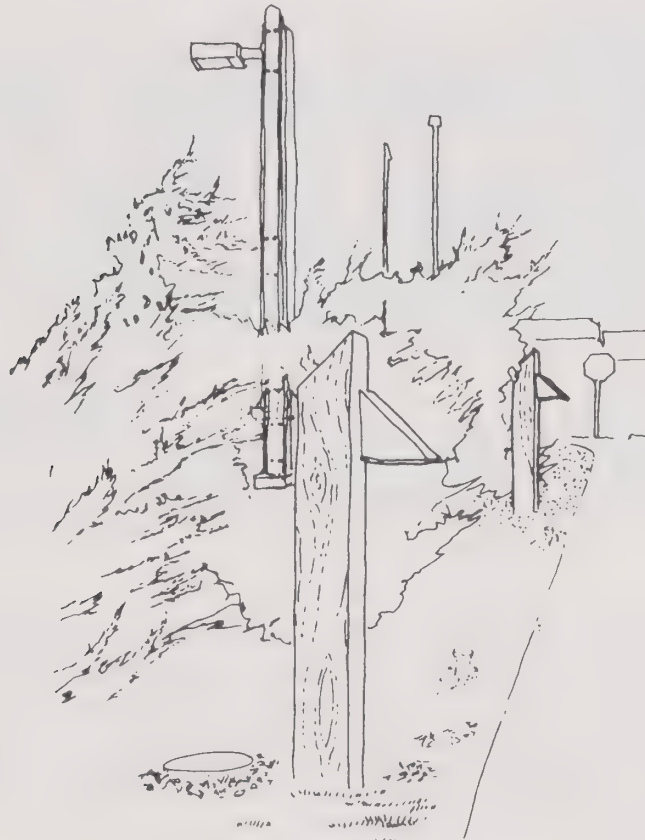
- Transitional Slope Plantings in High Fire Hazard Areas.  
Transitional slopes may be used between the domestic plantings of new development and the native flammable brush of undisturbed areas. The goal is to slow down the approaching fire within the transitional zone by reducing the fire's fuel supply. The following techniques may be used to accomplish this goal:
  - a. Evaluate the plant materials existing within the transitional zone for fuel volume and health. Remove plants from this area which are of particularly high fuel volume. Also remove any plants which are in poor health.
  - b. Retain in thinned out groupings low fuel volume native plants.
  - c. Clean out all dead leaves and branches in this area annually. Thin native plants by pruning to reduce their fuel volume. Reduce height of grass areas.
  - d. If water supplies permit, irrigate this zone monthly during the summer months to retain a high level of moisture in the plant leaves.
  - e. Trees spread fire quickly. Refer to Appendix B for plants that have reduced fuel volume.

## IV.A9. Site Lighting

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Site Lighting should be used efficiently to aid safety, security and compliment architectural character. It should minimize intrusion into adjacent properties, roadways, the hillside silhouette and the night sky.

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### 1. General Requirements

- All site lighting in hillside residential development should comply with San Rafael Zoning Ordinance Provisions.
- Site lighting which is visible in hillside residential development from adjacent properties, roadways and from other neighborhoods must be indirect or incorporate full shield cut-offs. Incorporate full shield cut-offs so as not to illuminate adjacent properties. Light sources should not be seen from adjacent properties or public rights-of-way.

### 2. Parking Area Lighting

- For hillside residential parking areas, overhead lighting must be mounted at a maximum height of 15 feet. The placement of lighting in residential parking areas should avoid interference with bedroom windows.

### **3. Walkway, Garden and Pedestrian Area Lighting**

- Overhead fixtures used for pedestrian areas should be limited to heights below 8 feet. Lower mounting heights are encouraged.
- Along walkways, low level lighting in the form of bollards or fixtures mounted on short posts is encouraged. Shatterproof coverings are recommended. Posts should be located to avoid hazards for pedestrians or vehicles.

### **4. Exterior Flood Lighting**

- Exterior flood lighting for security and safety shall be located and shielded so as not to shine on adjacent properties. Decorative lighting to highlight a structure is prohibited.

## IV.B. Additional Guidelines for Development Types

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This section lists additional Design Guidelines for specific Hillside Residential development types in the city. In addition to the General Guidelines in Section IV.A., guidelines from one of the following three sections should be used. In the case of projects with combinations of these development types, more than one section may need to be consulted. Developers and their designers are encouraged to meet with the City Planning staff to clarify questions of application.

The different type listed are:

- IV.B.1. Subdivisions and Planned Development Projects.
- IV.B.2. Single Family Residences on Individual Lots.
- IV.B.3. Multi-Family Residential Development.



## IV.B1. Subdivisions and Planned Development Projects

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### 1. Applicable City Ordinances:

- Subdivisions - *Title 15 of the San Rafael Municipal Code*, “Subdivisions.”
- Planned Development Projects - *Title 14 of the San Rafael Municipal Code*, “Planned Community District,” “Planned Unit Development District,” Chapter “Planned Development District.”

### 2. Preservation of Existing Natural Features

Hillside Residential Development plans should demonstrate an effort to preserve and protect significant natural features in the layout and design of streets, lots and grading patterns in subdivisions and planned developments.

- The provisions of guidelines IV.A1., “Site Design Process,” IV.A2., “Preservation of Significant Trees” should be followed as general design criteria for the preservation of natural features in the planning of hillside residential subdivisions and planned development projects.

- City Ordinances pertaining to the protection of natural features:
  - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
- City Adopted Policies pertaining to the preservation of natural features in hillside residential development:
  - *City of San Rafael, General Plan 2000*:
    - Land Use Element, Policies: LU-9, LU-10, LU-11 and LU-29.
    - Parks and Recreation Element, Policies: R-2, R-4, R-12, R-14, R-28, R-31, R-35.
    - Natural Environment Element, Policies: NE-1, NE-2, NE-3, NE-4, NE-5, NE-9, NE-11, NE-13, NE-17, NE-20.
    - Health and Safety Element, Policies: S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-19.
    - Residential Neighborhood Element, Policies: RES-1, RES-5, RES-6, RES-7, SVS-7, NG-13, NG-14.

### 3. Street Layout and Design

- The provisions of guideline IV.A5., “Street Layout and Design,” should be followed in the layout and design of streets, driveways and parking areas for hillside residential subdivisions and planned developments in hillside areas.
  - City Ordinances pertaining to the layout and design of streets, driveways and parking areas for hillside residential development:
    - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
    - *Title 15 of the San Rafael Municipal Code*, Subdivisions, General Regulations and Design for Streets and Highways.
  - City of San Rafael Standards pertaining to the layout and design of streets and roads in hillside residential development:
    - Uniform Construction Standards for the Cities of Marin and the County of Marin, Department of Public Works.
    - State of California, Department of Transportation’s Standard Specifications and Plans.

### 4. Hillside Grading and Drainage

- The provisions of guideline IV.A3., “Hillside Grading and Drainage,” should be followed in the design of grading and drainage plans for hillside residential subdivisions and

planned developments.

- City Ordinances pertaining to the design of grading and drainage plans for hillside residential development:
  - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
- City Review procedures pertaining to the design of grading and drainage plans for hillside residential subdivisions and planned developments:
  - San Rafael Department of Public Works, Grading Plan Review.
  - City of San Rafael, Geotechnical Review Matrix Process for the *San Rafael General Plan 2000*.
- City of San Rafael Standards pertaining to the design of grading and drainage plans for hillside residential subdivision and planned development projects:
  - City of San Rafael, Department of Public Works, Standard and Supplementary Conditions for Grading Permits.

## 5. Lot Configuration, Building Setbacks and Locations

- The provisions of guideline IV.A4., “Lot Configuration and Building Setbacks,” should be followed in the design of lot configurations, building setback determination and building envelope location for hillside residential subdivision and planned development projects. Establishment of building envelopes is a requirement on all parcels.





Building forms broken to be in keeping with hillside character.

#### CLUSTER DESIGN (see below)

Cluster design reduces grading requirements, watering requirements, and the area of impervious surfaces. this results in less interference with natural features and systems.



## 6. Residential Clustering in Hillside Areas

- The *San Rafael General Plan 2000* encourages residential clustering in impact sensitive hillside areas to preserve and protect natural features. Private properties zoned for planned development projects that are designated as *Hillside Resource Residential* or *Hillside Residential* in the *General Plan 2000* should follow the provisions of this guideline.
- City Ordinances pertaining to the design of planned development projects:
  - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
  - *Title 14 of the San Rafael Municipal Code*, “Planned Community District,” “Planned Unit Development District,” “Planned Development District.”
- Site Design Principles for Cluster Housing in Hillside Areas.

Cluster Housing may be described as housing that is joined together so that individual units share common walls, floors and ceilings. This may include single family dwellings

on small lots with “zero lot line” configurations. More importantly, the individual units share common open spaces and common facilities.

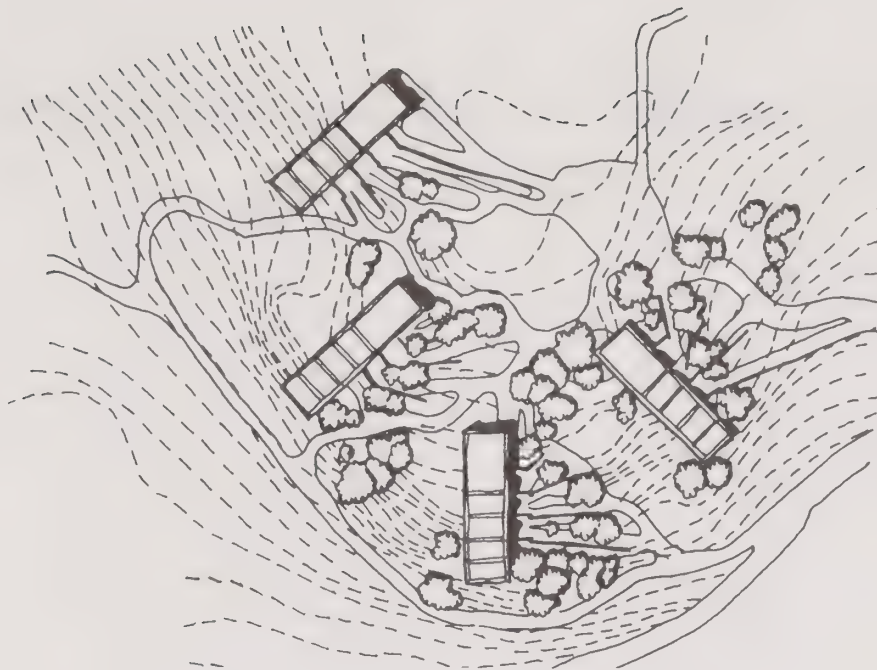
- Provisions of guideline IV.A6., “Reduction of Building Bulk on Hillsides,” guideline IV.A7., “Architectural Character,” guideline IV.A9., “Site Lighting” should be followed in the design of cluster residential development in hillside areas.

Other principles for the site design of cluster housing in hillside areas are:

- Allow front and side setback requirements to be flexible (including zero lot line conditions) to promote clustering of buildings if this will protect an existing slope.
- Allow flag lots with parking located adjacent to roadways to encourage terracing of buildings while minimizing roadway cut and fill.
- Avoid large expanses of flat areas such as parking lots that create an incongruous element in the slope.
- Site buildings with units having different floor elevations to achieve height variation.
- Buildings located near hillside rims have higher visibility. these buildings should be sited in a staggered arrangement and screened with planting to minimize a “wall” effect.
- Retain existing vegetation.



- Avoid long continuous building masses that create a “wall” effect and inhibit views. Townhouses in duplex and triplex arrangements are good building types for sloping sites.
- Groups of buildings should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation.
- Facades should be articulated to produce shadows through wall setbacks, overhangs, projecting windows, recessed openings, decks, and porches.
- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillside sites.
- The building facades and rooflines should, in contribution, provide a mixture of vertical and horizontal elements, but with more emphasis on verticality in cluster design.
- Stagger alignments of units both horizontally and vertically to create unit identity, privacy at entry, and in private outdoor space and to shape cluster open space.



Site Plan — Terraced Flats with private outdoor spaces.

- Flats may be stacked to terrace down toward a view and sunlight, creating privacy on balconies and terraces.
- Separate clusters with expanses of open space, including tree groupings.

#### **7. Planting Design for Hillside Residential Subdivision and Planned Development Projects.**

- The provisions of guideline IV.A8., “Planting Design for Hillsides,” should be followed in the design of landscape plans for hillside residential subdivision and planned development projects.

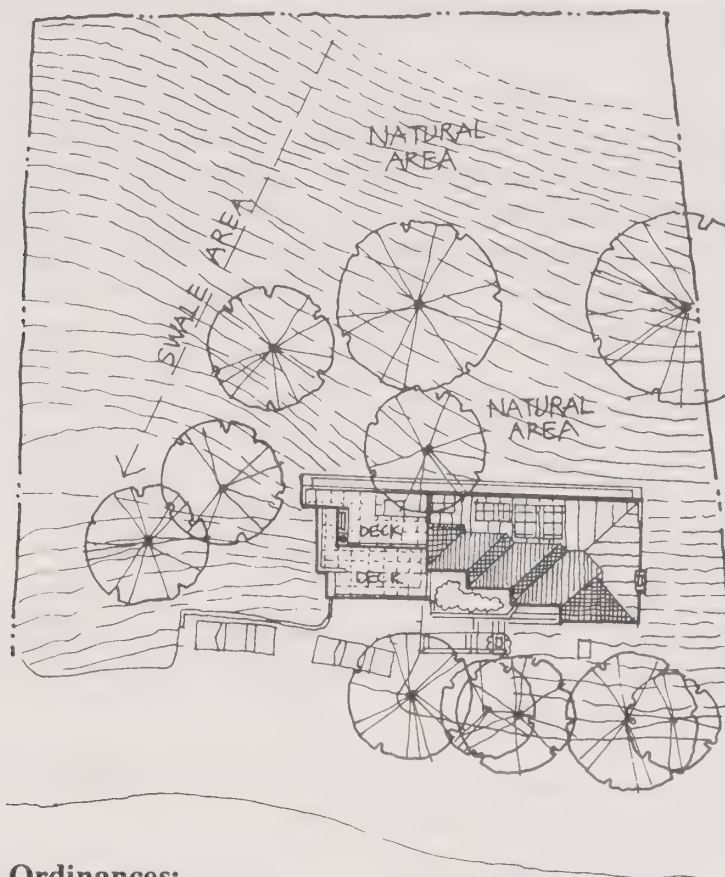
#### **8. Fire Hazards**

- A biologist’s report is required that classifies portions of the site by their degree of risk to plant communities from Wildland Fires.
- Building Envelopes should be located so as to minimize risk to structures due to Wildland Fires.



## IV.B2. Single Family Residences on Individual Lots

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### 1. Applicable City Ordinances:

- *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, "Environmental and Design Review."
- *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, "Residential Districts."

### 2. Preservation of Existing Natural Features

Development proposals for single family homes on individual lots should demonstrate an effort to preserve and protect significant natural features in the layout and design of driveways, parking areas, building location, outdoor spaces, and accessory structures.

- The provisions of guidelines IV.A1., "Site Design Process," IV.A2., "Preservation of Significant Trees" should be followed as general design criteria for the preservation of natural features in the planning of single family residences on individual lots in areas designated as *HR* and *HRR* land uses in the *General Plan 2000*.

- City Adopted Policies pertaining to the preservation of natural features in hillside residential development:
  - *City of San Rafael, General Plan 2000:*
    - Land Use Element, Policies: LU-9, LU-10, LU-11 and LU-29.
    - Parks and Recreation Element, Policies: R-2, R-4, R-12, R-14, R-28, R-31, R-35.
    - Natural Environment Element, Policies: NE-1, NE-2, NE-3, NE-4, NE-5, NE-9, NE-11, NE-13, NE-17, NE-20.
    - Health and Safety Element, Policies: S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-19.
    - Residential Neighborhood Element, Policies: RES-1, RES-5, RES-6, RES-7, SVS-7, NG-13, NG-14.

### 3. Hillside Grading and Drainage

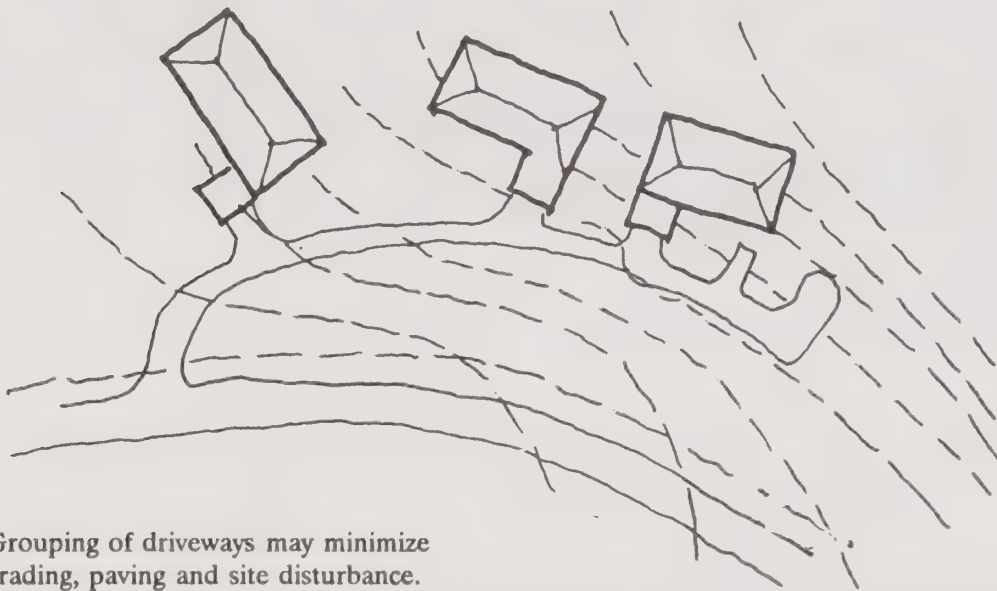
- The provisions of guideline IV.A3., “Hillside Grading and Drainage,” should be followed in the design of grading and drainage plans for single family residences on individual lots in *HR* and *HRR* areas as designated by the *General Plan 2000*:
  - City Ordinances pertaining to the design of grading and drainage plans for single family residences on individual lots in hillside areas designated as *HR* and *HRR* land uses in the *General Plan 2000*.
    - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, Environmental and Design Review.
  - City Review procedures pertaining to the design of grading and drainage plans for single family residences on individual lots in hillside areas designated as *HR* and *HRR* land uses in the *General Plan 2000*:
    - San Rafael Department of Public Works, Grading Plan Review.
    - City of San Rafael, Geotechnical Review Matrix Process for the *San Rafael General Plan 2000*.
  - City of San Rafael Standards pertaining to the design of grading and drainage plans for single family residences on individual lots:
    - City of San Rafael, Department of Public Works, Standard and Supplementary Conditions for Grading Permits.

#### 4. Parking and Driveway Design

The provisions of guideline IV.A5., “Street Layout, Driveways and Parking” should be followed in the design of driveways for single family residences on individual lots in *HR* and *HRR* Land Use designations.

- **Parking.**

Tandem parking may be permitted on hillside lots served by an access drive with the approval of the Design Review Board and the City Engineer, when the allowance of tandem parking minimizes the impact of hillside development.



Grouping of driveways may minimize grading, paving and site disturbance.

- **Driveway Design**

Driveways should be designed to provide direct access to the building site and, where possible, be aligned with the natural contours of the land. Driveways which serve more than one parcel are encouraged as a method of reducing unnecessary grading, paving and site disturbance. City standards as to the maximum number of dwellings served by a single private drive should be followed. Property owners shall enter into Common Easement maintenance agreements for private drives.

Driveway grade in hillside developments must comply with the City of San Rafael regulations governing driveway design. On driveways that are allowed to exceed the 18% slope (with Design Review Board, City Engineer, and Fire Department approval), either a coarse paving material or grooves for traction must be incorporated into the construction. Drainage from the driveway should be directed in a controlled manner.

The finished grade of the driveway shall conform to the finished grade of the lot.

- 5. Architectural Design of Single Family Residences on Individual Lots in hillside areas with slopes of 25% or greater.**
  - Provisions of guideline IV.A6., “Reduction of Building Bulk on Hillsides” and guideline IV.A7., “Architectural Character” in Section IV. of this manual should be followed in the design of single family residences in the hillside areas identified above.
- 6. Planting Design for Single Family Residences on Individual Lots in Hillside Areas with slopes of 25% or greater.**
  - The provisions of guideline A8, “Planting Design for Hillsides,” in Section IV of this document should be followed in the design of landscape plans for single family residences on individual lots in the hillside areas identified above.
- 7. The provisions of Section III, “Hillside Residential Development Standards” which regulate building height, floor area, building bulk and site coverage, apply to single family residences in Hillside areas with slope of 25% or greater.**

## IV.B3. Multi-Family Residential Development

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### 1. Applicable City Codes:

- *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, R-3 Zone, “Residential Districts.”

*Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”

### 2. Preservation of Existing Natural Features

Hillside Residential Development plans should demonstrate an effort to preserve and protect significant natural features in the layout and design of streets, lots and grading patterns in multi-family residential development projects:

- The provisions of guidelines IV.A1., “Site Design Process,” IV.A2., “Preservation of Significant Trees” should be followed as general design criteria for the preservation of natural features in the planning of multi-family residential development projects.
- City Adopted Policies pertaining to or related to the preservation of natural features in hillside residential development:

— City of San Rafael, *General Plan 2000*:

- Land Use Element, Policies: LU-9, LU-10, LU-11 and LU-29.
- Parks and Recreation Element, Policies: R-2, R-4, R-12, R-14, R-28, R-31, R-35.
- Natural Environment Element, Policies: NE-1, NE-2, NE-3, NE-4, NE-5, NE-9, NE-11, NE-13, NE-17, NE-20.
- Health and Safety Element, Policies: S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-19.
- Residential Neighborhood Element, Policies: RES-1, RES-5, RES-6, RES-7, SVS-7, NG-13, NG-14.

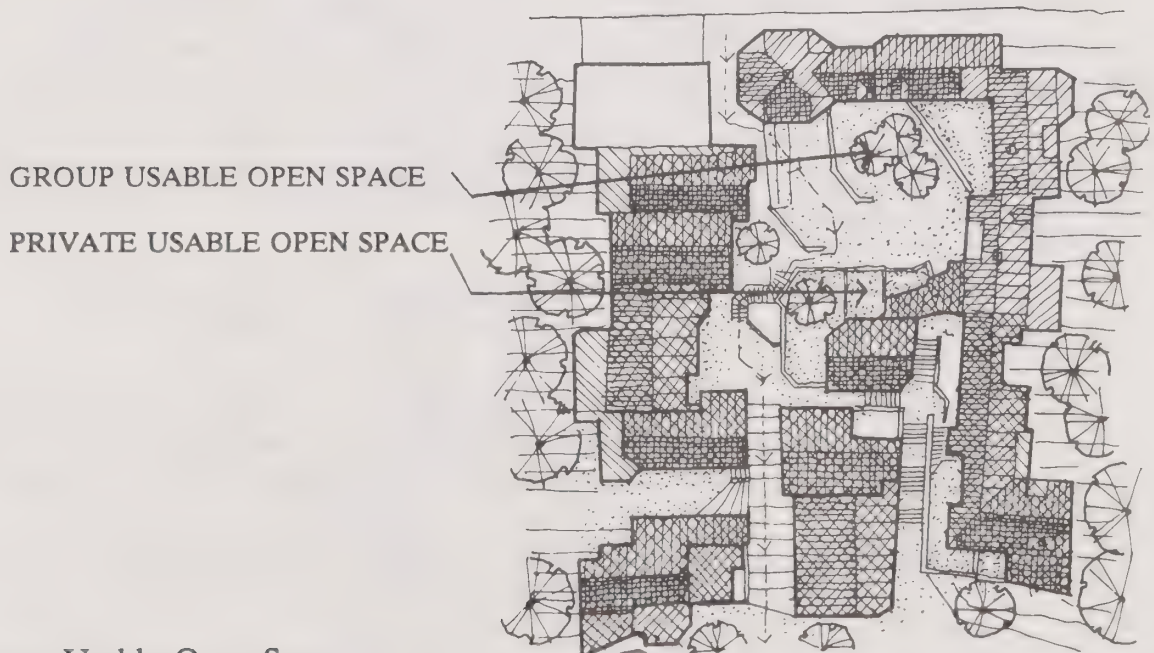
### 3. Hillside Grading and Drainage

- The provisions of guideline IV.A3., “Hillside Grading and Drainage,” should be followed in the design of grading and drainage plans for multi-family residential development projects in *HR* and *HRR* areas as designated by the *General Plan 2000*.
  - City Ordinances pertaining to the design of grading and drainage plans for multi-family residential development projects in hillside areas designated as *HR* and *HRR* land uses in the *General Plan 2000*.
    - *Title 14 of the San Rafael Municipal Code*, City of San Rafael Zoning Ordinance, “Environmental and Design Review.”
  - City Review procedures pertaining to the design of grading and drainage plans for multi-family residential development projects in hillside areas with slopes of 25% or greater:
    - San Rafael Department of Public Works, Grading Plan Review.
    - City of San Rafael, Geotechnical Review Matrix Process for the *San Rafael General Plan 2000*.
  - City of San Rafael Standards pertaining to the design of grading and drainage plans for multi-family residential development projects:
    - City of San Rafael, Department of Public Works, Standard and Supplementary Conditions for Grading Permits.

4. **Site Design Principles for Multi-Family Residential Areas in Hillside Areas with slopes of 25% or greater.**
- Provisions of guideline IV.A6., “Reduction of Building Bulk on Hillsides,” guideline IV.A7., “Architectural Character,” guideline IV.A9., “Site Lighting” should be followed in the design of cluster residential development in hillside areas.

Other principles for the site design of multi-family residential development in hillside areas are:

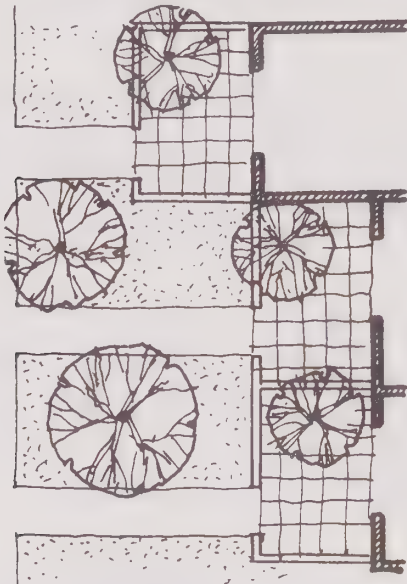
- Sloping sites offer opportunities to create and emphasize characteristics that are unique. These include emphasis on outdoor decks, roof gardens, terraces, roof forms, bay windows to maximize views from inside, clusters of carefully placed vegetation, framing of distant views with vegetation and building elements, pergolas, lookouts for viewing, sculptured stairs and walkways.
- Ideally there should be a 15 foot planted yard setback along the front and a 10 foot planted setback along side property lines, or as established by the Zoning Ordinance. The setback area should be fully landscaped, interrupted only by pedestrian areas. To promote the protection of significant natural features, allow front and side setback requirements to be flexible, with the discretion of Environmental Design Review.



- **Group Usable Open Space**  
Group Usable Open Space is space for common use by the occupants of a development, normally including playgrounds, recreation courts, patios, and landscaped areas. Parking, driveways and loading areas are not considered Group Usable Open Space.

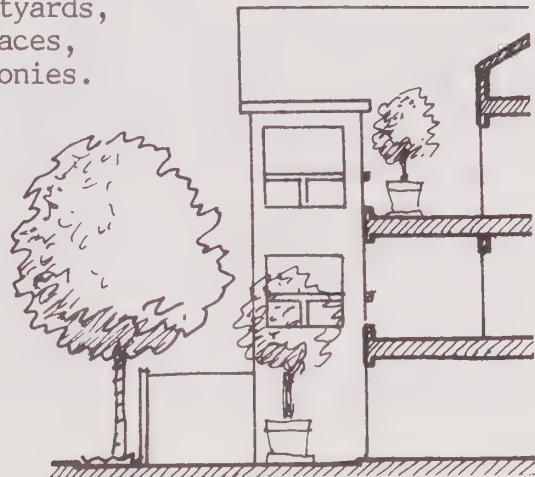
Provide all multi-family projects with Group Usable Open space for each dwelling unit consistent with the City of San Rafael regulations for multi-family residential development.

Provide at least one designated children's play area of at least 400 square feet for the first 25 dwelling units. This guideline does not apply to senior citizen residential projects. Additional requirements for usable outdoor areas are established by the Zoning Ordinance.



#### Private Usable Open Space

Courtyards,  
Terraces,  
Balconies.



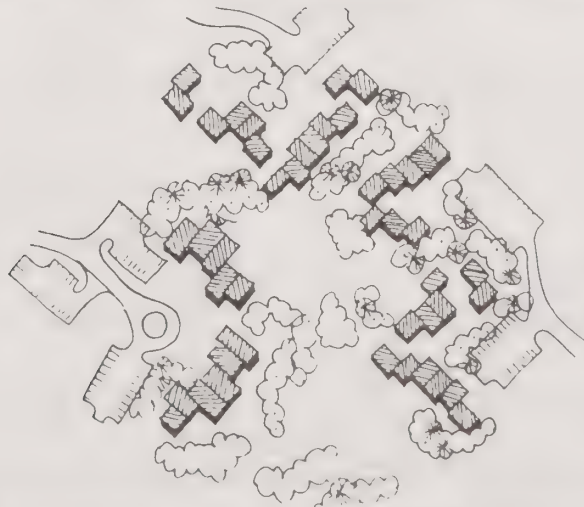
#### — Private Usable Open Space

All multi-family projects are encouraged to provide Private Usable Open Space for each dwelling unit consistent with the City of San Rafael regulations for multi-family residential development.

The City of San Rafael regulations governing multi-family residential open spaces should apply with the following additional recommendations:

- Private open spaces on the ground should be a minimum of 12 feet in each plan dimension, or the minimum established by the Zoning Ordinance, and should be screened from public view by plantings, privacy fences, and other similar methods.
  - Decks used for upper floor private space should have a minimum dimension of 8 feet, or the minimum established by the Zoning Ordinance.
  - Use terracing to achieve level spaces when providing open space on steep slopes.
  - Locate private outdoor spaces to receive solar gain in the winter months.
- Avoid large expanses of flat areas such as parking lots that create an incongruous element in the slope.

- Site buildings with units having different floor elevations to achieve height variation.
- Buildings located near hillside rims have higher visibility. these buildings should be sited in a staggered arrangement and screened with planting to minimize a “wall” effect.
- Avoid building facades that are designed with a ground level wall of repetitive garage doors.
- Retain existing vegetation.
- Avoid long continuous building masses that create a “wall” effect and inhibit views. for sloping sites.
- Groups of buildings should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation.
- Facades should be articulated to produce shadows through wall setbacks, overhangs, projecting windows, recessed openings, decks, and porches.
- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillside sites.
- The building facades and rooflines should, in contribution, provide a mixture of vertical and horizontal elements, but with more emphasis on verticality in cluster design.
- Stagger alignments of units both horizontally and vertically to create unit identity, privacy at entry, and in private outdoor space and to shape common open space.

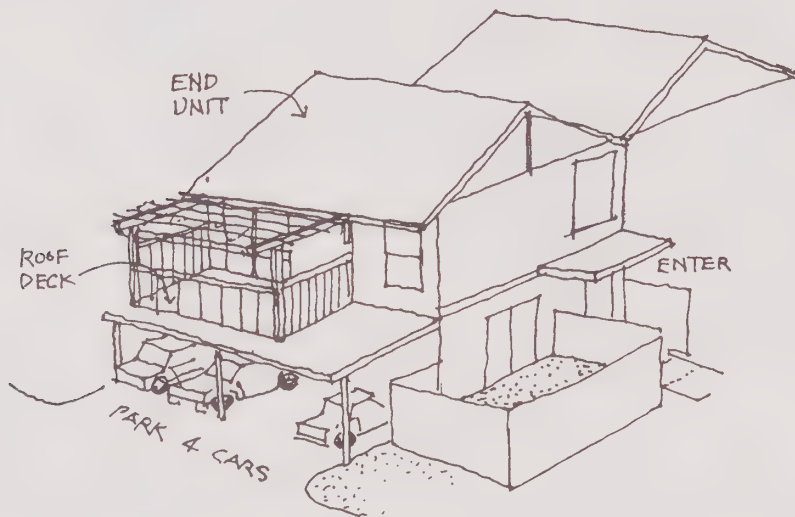


Buildings with common open spaces and integral existing tree groupings.

- Separate buildings with common open spaces, integrate existing or provide new tree groupings in these spaces.

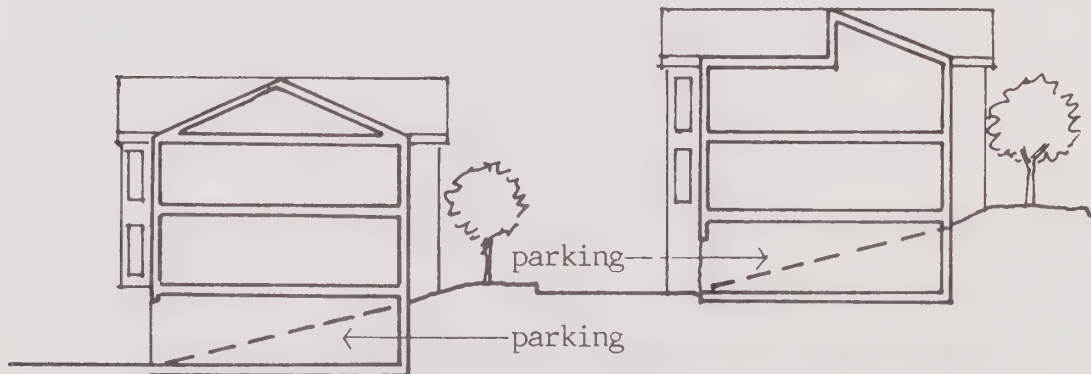
## 5. Parking Design for Multi-Family Residential Development on Hillside Sites.

- Applicable City Codes:
  - Title 14 of the San Rafael Municipal Code, City of San Rafael Zoning Ordinance, "Parking Standards."
- Covered and "Tuck-under" Parking.
  - Covered parking areas, by means of garages, carports, and trellised canopies, are strongly encouraged.



Covered Parking

- Tuck-under parking, on sloping sites at half or full level below ground, is encouraged.



TUCK UNDER PARKING

- **Surface Parking Areas**

- For all surface parking areas, an internal area equal to a minimum of 10% of the total parking area should be planted with a combination of trees and shrubs. Tree spacing should be such that every designated parking space is within 30 feet of the trunk of a tree. Turf areas are discouraged. See Appendix B. “Plant selection Guide.”

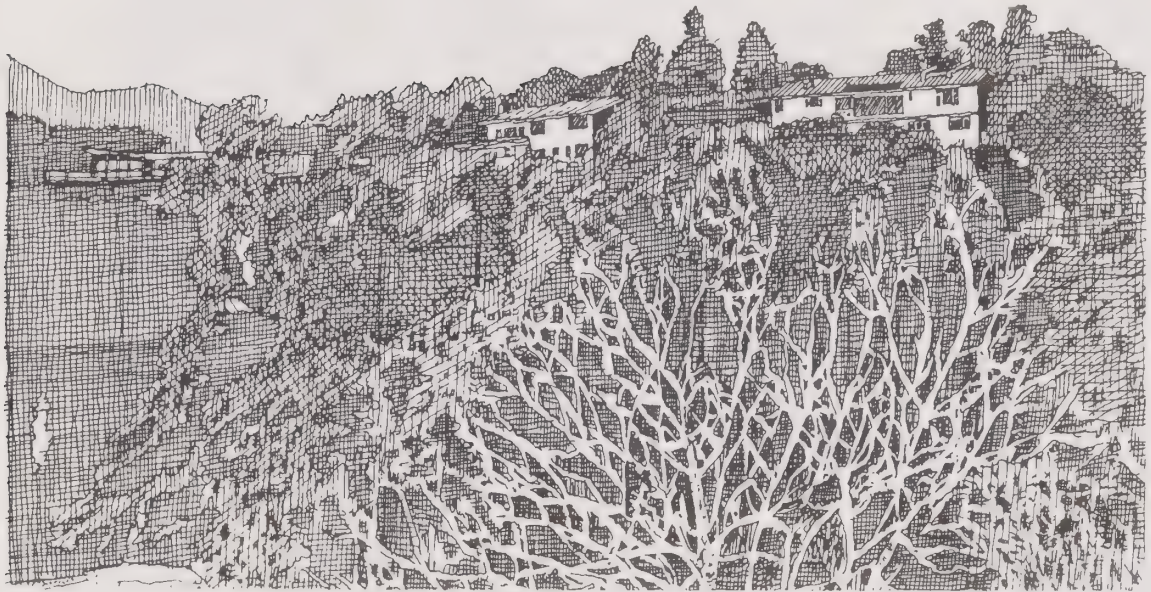
**6. Planting Design for Multi-family Residential Development Projects.**

- The provisions of guideline IV.A8., “Planting Design for Hillsides,” should be followed in the design of landscape plans for multi-family residential development projects in hillside areas that have the *HR* and *HRR* Land Use designations in the *General Plan 2000* or are located on properties with slopes of 25% or greater.
- 7. The provisions of Section III, “Hillside Residential Development Standards,” which regulate building height and bulk, apply to multi-family residential development.**



## IV.C. Additional Guidelines for Special Areas

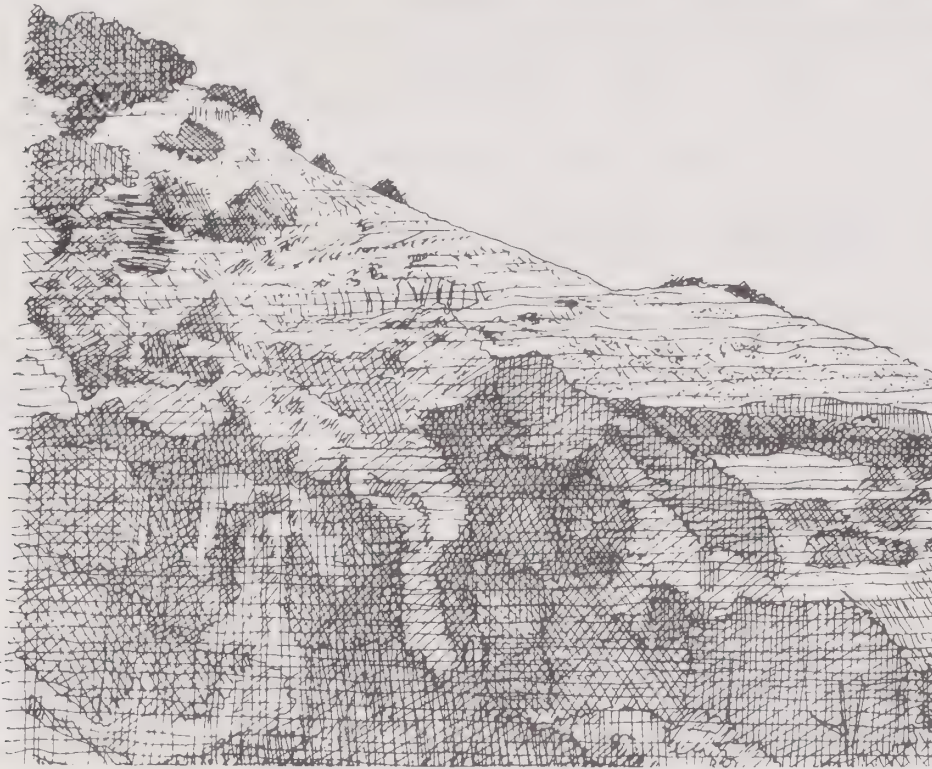
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## IV.C1. Highly Visible Ridgeline Areas

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This Guideline lists development standards and design guidelines that protect the scenic and aesthetic value of San Rafael's highly visible ridgeline areas. The City of San Rafael is situated among a group of hills and ridges which constitute a significant natural feature visible to all persons travelling the major highways and arterials through the county, as well as the citizens residing in and around the community. In order to insure the preservation of these hills, ridges and ridgelines and their natural features, a more harmonious relationship is required between the existing natural environment and the growing man-made environment.

- Generally, building sites should be selected so that construction occurs below the ridge of a hillside.
- The selection of each final building envelope is affected by many factors specific to each property and can only be established on a case-by-case basis.

The potential hazards created by development, grading and alteration of drainage patterns on hillsides are not only a concern of the development itself but may cause damage to properties downhill of the property. For this reason, the larger off-site implications of all proposed buildings and improvements such as roads, driveways, and other built improvements such as parking areas, land form grading and drainage should be considered in all Environmental and Design Reviews.

While the following definitions and guidelines are compatible with current regulations, they do not supersede adopted City policies pertaining to development in ridgeline areas. These currently include the policies pertaining to the preservation of natural features in San Rafael's *General Plan 2000* (NE-14, NE-15, NE-17).

## 1. Definitions

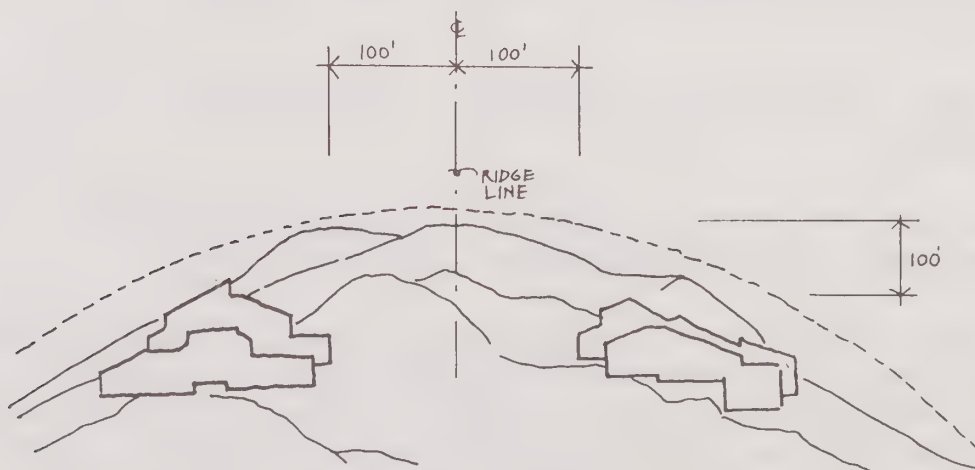
- “Ridgeline” means a long, narrow, conspicuous elevation of land.
- “Knoll” means a hilltop or a small round hill.

## 2. Development near ridgelines or knolls.

The development of new independent structures shall be prohibited within 100 vertical feet of highly visible ridgelines except in those cases where loss of development potential would deprive the property owner of all reasonable economic use of the land.

An exception may be granted under this circumstance provided the following findings can be made:

- 1) there are no site development alternatives which avoid ridgeline development and the density has been reduced to the minimum allowed by the General Plan land use designation density range; and
- 2) no new subdivision lots are created which will result in ridgeline development; and
- 3) the proposed development will not have significant adverse visual impacts due to modifications for height, bulk, design, size, location, siting, and landscaping which avoid or minimize the visual impacts of the development as viewed from all public viewing areas.



Avoid locating structures near highly visible ridgelines.

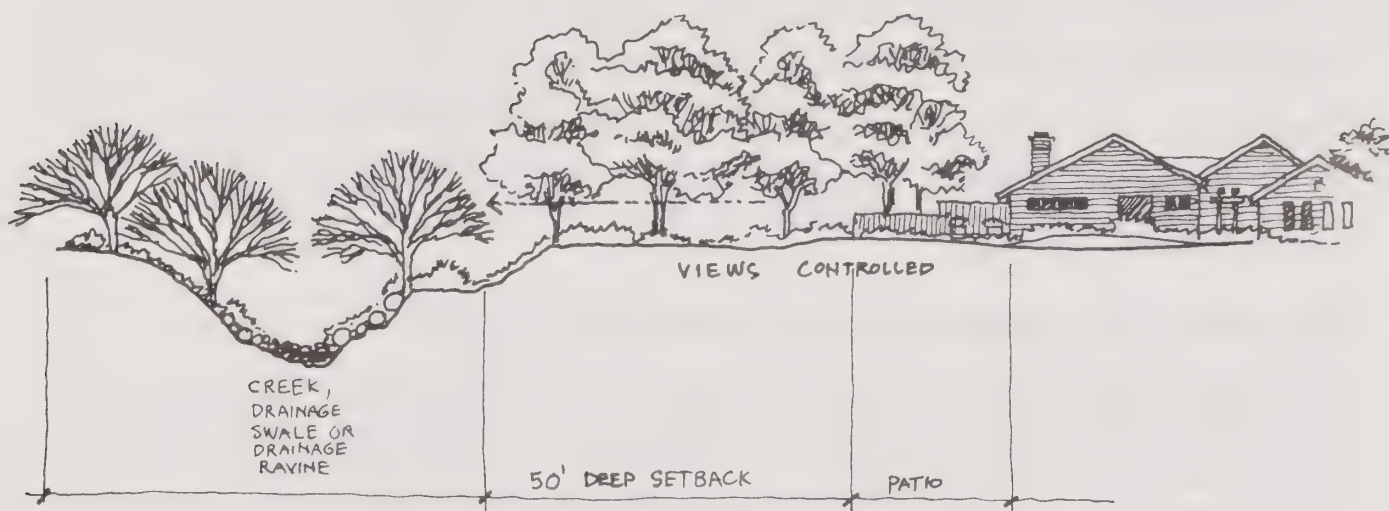
In those rare instances, development near ridgelines or knolls is permitted subject to the following Guidelines:

- a. Proposed building sites and/or structures shall not detrimentally impact a highly visible ridgeline or knoll. Development on any parcel within 100 feet measured vertically from a highly visible ridgeline shall be subject to Environmental and Design Review.
- b. No point on any structure subject to the provisions of this guideline shall be closer to a highly visible ridgeline than 100 feet measured horizontally on a topographic map or 50 feet measured vertically on a cross section, whichever is more restrictive. In no case, shall the roof line or any other portion of a structure extend above the line of sight between a ridgeline and any public right of way, whether the ridgeline is above or below the right-of-way.
- c. Design of building sites should be sensitive to the natural terrain of prominent knolls. Structures should be located in such a way as to minimize grading and building pads must preserve prominent knolls.
- d. The development plans for Planned Hillside Residential Development projects shall provide for the natural preservation of highly visible ridgelines, protecting them from development impacts and maintaining a backdrop for development. Significant views of the natural ridge silhouette shall be maintained from public rights-of-way and other public open spaces, especially major highways. Proposed structures shall not project above the ridge silhouette as visible from City designated viewpoints. The ridgeline's natural contour and vegetation shall remain intact with development maintaining a minimum horizontal setback of 100 feet in width from the center of the ridgeline to the undisturbed setback line. Lesser setback distances may be authorized at the discretion of the City Council if it can be demonstrated that the objectives of this will be achieved and, in any case no units will be located in that setback.
- e. When placement of roads near ridges and on slopes is proposed, acceptable placements shall include a split roadway section to accommodate grade, knob removal to accommodate views from the road, and the rounding off of cut slopes to improve appearance.
- f. Multi-story homes are not considered appropriate for ridgeline lots.
- g. Fences and freestanding walls should be located away from any ridgeline, knoll or crest of any slope so that fences and walls are not visible against the sky from offsite.



## IV.C2. Hillside Drainage Swales and Drainage Ravines

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Homes backing up to a drainage swale or ravine.

This Guideline lists development standards and design guidelines that protect the scenic and aesthetic value of San Rafael's hillside riparian areas on lands with the **HR** and **HRR** Land Use designation in the *General Plan 2000* and on lands with slopes of 25% or greater. The riparian areas and watersheds create areas of natural focus in the hillside areas and should be preserved and protected. In order to insure the preservation of these riparian areas, a more harmonious relationship is required between the existing natural environment and the growing man-made environment.

- New Hillside Residential Development applications are required to provide detailed hydrologic analysis to be reviewed by the City Engineer. Developers may be required to replace inadequate on and off-site existing hillside storm drainage facilities.
- A comprehensive study may be required for each project to develop specific information on the nature, extent and magnitude of slope stability hazards in watershed areas. Basic data required would be suitable for determining the types and severity of watershed and debris flow paths that may influence developments. The study product would identify:
  - Major watershed areas related to specific neighborhoods.
  - Areas impacted by recent movements of debris or other surficial materials.
  - Areas identified as "High Energy Flow Path Zones."

- Areas of various degrees of slope, especially areas with steep slopes of 65% or greater.

The potential hazards created by development, grading and alteration of drainage patterns on hillsides are not only a concern of the development itself but may cause damage to properties downhill of the property. For this reason, the larger off-site implications of all proposed buildings and improvements such as roads, driveways, and other built improvements such as parking areas, land form grading and drainage should be considered in all Environmental Design Reviews.

While the following definitions and guidelines are compatible with current regulations, they do not supersede adopted City policies pertaining to development in ridgeline areas. These currently include the policies pertaining to the preservation of natural features in *San Rafael's General Plan 2000*.

### **Development Near Drainage Swales and Drainage Ravines**

The general intent of this Guideline is to discourage development near hillside riparian areas. Currently the City of San Rafael requires a 25 foot deep setback from the high top of creek banks for all structures. Wider setbacks (100 feet ideally) will be required on larger parcels through project review. See the Natural Environment Element of the *General Plan 2000* for additional policies related to the Protection of Wetland Buffer Areas.

- a. Development setback in drainage swales. All watersheds exceeding 10 acres shall be considered "major" watersheds and shall be reviewed on a case-by-case basis to determine development setback requirements. When the applicable planned development plan requires the retention of natural drainage swales, no tentative subdivision map will be approved without a hydrologic analysis to determine an adequate setback for preservation of natural drainage patterns, public safety and riparian vegetation and wildlife.
- b. Filling in of watercourses, canyons, or streambeds is prohibited.
- c. Debris basins, rip-rap, and energy dissipation devices shall be provided when necessary to reduce erosion when grading is undertaken. Except for necessary flood control facilities, significant natural drainage courses shall be protected from grading activity. In instances where crossing is required, a natural crossing and bank protection is preferred over steel and concrete systems. Where brow ditches are required, they shall be naturalized with plant materials and native rocks.
- d. Natural drainage courses shall be preserved and integrated into project design.
- e. **Stream Bank Stabilization**  
Self formed stream channels tend to be in a state of equilibrium, nearly stable, and usually do not require artificial bank stabilization. Land use changes that cause an increase in impervious surfaces or sedimentation will result in channel erosion. This

may require measures to stabilize the stream bank.

- 1) Stream rehabilitation is the preferred method of stabilization, its objective being to maintain the natural character of the watercourse and riparian area. The process may include enlarging the channel at points of obstruction, clearing obstructions at natural bend and points of constriction, limitation of use in areas of excessive erosion and restoration of riparian vegetation.
- 2) Concrete channels and other mechanical measures of stabilization should not be permitted unless no other alternative exists.
- 3) If a stream bank stabilization other than stream rehabilitation and vegetative methods is required, hand places stone or rock rip-rap are the preferred methods.

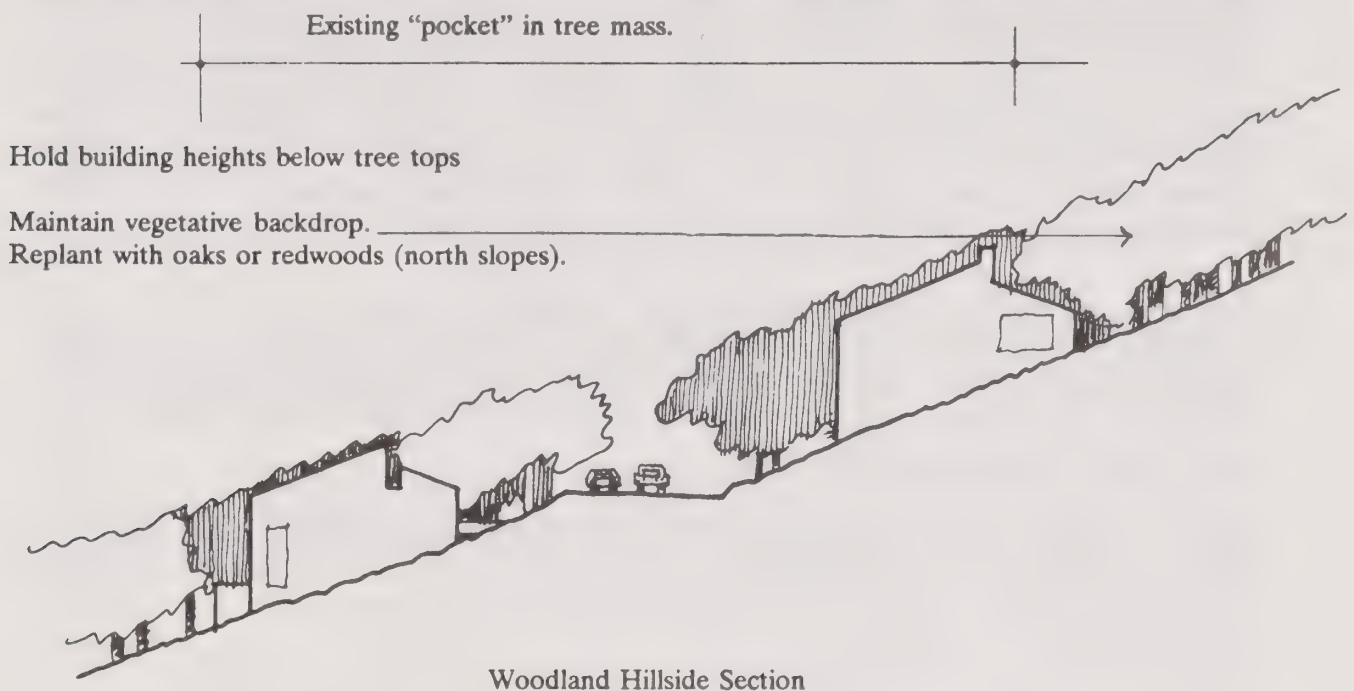
f. **Planting in Riparian Areas.**

The riparian area should be kept as close as possible to its natural state. The open spaces and indigenous riparian vegetation such as live oaks, sycamores, bays and scrub should be preserved and emphasized in new plantings. Ornamental plantings and the introduction of non-native species should be avoided.



## IV.C3. Hillslope Habitat Areas

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The open and wooded hillsides contribute significantly to the scenic backdrop of the City when viewed from its developed areas in the valley floors. This is due to the low density of development in the upland areas, the minimal visual bulk of most residential structures and the heavy vegetative screen for residences.

The upland hillslope areas are characterized as having unique scenic qualities, vegetation, wildlife habitat and limited development potential.

The major plant and wildlife communities are as follows:

- Oak Savannah - Oak Savannah is comprised of open grassland with isolated and scattered oak trees.
- Oak Woodland - The Oak Woodland community is comprised of greater tree cover than the Oak Savannah community. The tree canopy may be made up of coast live oak, bay oak, California bay, madrone and buckeye trees. The understory includes different herbs and grasses depending on the quantity of sun exposure. In addition to their wildlife habitat value, Oak Woodlands are important to soil development and watershed protection.
- Redwood Groves - Small groves of redwood trees are found on north facing slopes and valleys which contain natural seepage or springs.

## 1. Wildland Fire Hazards in Hillslope Areas

The vegetation in hillslope areas of the City is extremely flammable during the late summer, fall and times of drought. This creates a serious hazard in undeveloped areas and large lot homesites with their extensive areas of unirrigated vegetation. In addition to the dry periods of the year, wildland fire hazard is related to slope steepness, vegetation type, exposure to sun and accessibility to fire fighting equipment. Steeper slopes are a major hazard because they have a fire spreading effect similar to high velocity winds. Fuel loading, which reflects the different amounts of combustible material provided by various vegetation types helps determine the degree of hazard.

To reduce the risk, the Fire Department maintains a system of fire trails and a “Greenbelt Program” where information on fire hazard is provided to residences adjacent to open space. The “Greenbelt Program” promotes creative landscaping, with attention to fire resistive characteristics; erosion control; and fuel reduction programs to clear fire transmitting growth.

The Fire Department coordinates with the Marin Municipal Water District and City Departments through the City’s development review process to insure that water supply necessary for fire safety and other Fire Department concerns are met for new development.

Additional guidelines pertaining to the transitional areas between undeveloped hillslope areas and new development are:

### — Transitional Slope Plantings in High Fire Hazard Areas

Transitional slopes may be used between the domestic plantings of new development and the native flammable brush of undisturbed areas. The goal is to slow down the approaching fire within the transitional zone by reducing the fires fuel supply. The following techniques may be used to accomplish this goal:

- a. Evaluate the plant materials existing within the transitional zone for fuel volume and health. Remove plants from this area which are of particularly high fuel volume. also remove any plants which are in poor health.
- b. Retain in thinned out groupings low fuel volume native plants.
- c. Clean out all dead leaves and branches in this area annually. Bare dirt is a good fire break. Thin native plants by pruning to reduce their fuel volume.
- d. If water supplies permit, irrigate this zone monthly during the summer months to retain a high level of moisture in the plant leaves.
- e. See Appendix B for suggestions of reduced fuel volume plantings.

## 2. Development in Hillslope Habitat Areas

- The *San Rafael General Plan 2000* encourages residential clustering in impact sensitive hillslope habitat areas to preserve and protect natural features and vegetation groupings. Private properties zoned for residential development projects that are designated as **Hillside Resource Residential** or **Hillside Residential** in the *General Plan 2000*, or are located on properties with slopes of 25% or greater, should follow the provisions of this guideline.
- Site Design Principles for Cluster Housing in Hillside Areas

Cluster Housing may be described as housing that is joined together so that individual units share common walls, floors and ceilings. More importantly, the individual units share common open spaces and common facilities.
- Provisions of guideline A6, “Reduction of Building Bulk on Hillsides,” guideline A7, “Architectural Character,” guideline A9, “Site Lighting” in Section IV of this document should be followed in the design of cluster residential development in hillslope habitat areas.

Other principles for the site design of cluster housing in hillslope habitat areas are:

- Incorporate existing trees and vegetation groups into the design of projects in hillslope habitat areas:
  - Oak Savannah habitats - incorporate existing oaks into the design of Group Usable Open Spaces and Private Usable Open Spaces as well as using existing vegetation to screen new development from offsite views.

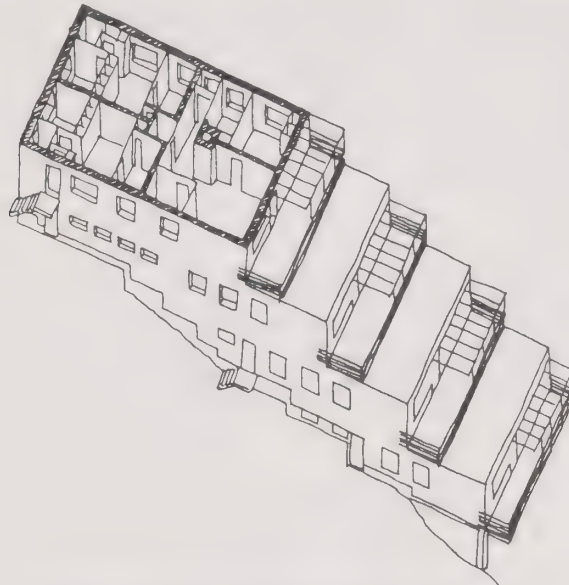
- Oak Woodland habitats - preserve existing tree canopies and place new development in “pockets” within the overall tree massing. Use existing vegetation to screen new development from offsite views.
- Allow front and side setback requirements to be flexible (including zero lot line conditions) to promote clustering of buildings if this will protect an existing slope.
- Allow flag lots with parking located adjacent to roadways to encourage terracing of buildings while minimizing roadway cut and fill.
- Avoid large expanses of flat areas such as parking lots that create an incongruous element in the slope.
- Site buildings with units having different floor elevations to achieve height variation.
- Buildings located near hillside rims have higher visibility. These buildings should be sited in a staggered arrangement and screened with planting to minimize a “wall” effect.



Townhouses in duplex or triplex arrangements.

- Avoid long continuous building masses that create a “wall” effect and inhibit views. Townhouses in duplex and triplex arrangements are good building types for sloping sites.
- Groups of buildings should be designed with visible differences. This may be achieved through materials, colors, forms and facade variation.
- Facades should be articulated to produce shadows through wall setbacks, overhangs, projecting windows, recessed openings, decks, and porches.

- Rooflines should avoid extended horizontal lines. Pitched, gabled and hipped roofs are more appropriate for hillslope sites.
- Stagger alignments of units both horizontally and vertically to create unit identity, privacy at entry, and in private outdoor space and to shape cluster open space.



Terraced flats with private outdoor spaces.

- Flats may be stacked to terrace down toward a view and sunlight, creating privacy on balconies and terraces.
- Separate clusters with expanses of open space, including tree groupings.
- Site Design and Architectural Design of Single Family Residences on Individual Lots in hillslope habitat areas.
  - Provisions of guideline A1, “Site Design Process,” guideline A2, “Preservation of Significant Trees,” guideline A3, “Hillside Grading and Drainage,” guideline A6, “Reduction of Building Bulk on Hillsides” and guideline A7, “Architectural Character” in Section IV. of this manual should be followed in the design of single family residences on individual lots in hillslope habitat areas.



# Appendix A

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## ENVIRONMENTAL DESIGN REVIEW APPLICATION REQUIREMENTS FOR HILLSIDE RESIDENTIAL DEVELOPMENT PROJECTS

This section lists submittal requirements for all hillside residential development projects subject to Environmental Design Review. For projects subject to “Minor” Environmental Design Review, 10 copies of all drawings must be submitted for full submittal. For projects subject to “Major” Environmental Design Review, 17 copies must be submitted for full submittal. All copies must be folded to fit a 9" x 14" envelope, unless they are so thick they can only be rolled up.

Please make submittals as clear as possible and follow accepted conventions of drawings—all drawings clearly labelled, scales shown (not to exceed 1" = 40' for engineering drawings, not to exceed 1/8" = 1'-0" for architectural drawings), north arrow on plans, clear and readable line work, name of the project, name, address and phone number of applicant, engineer or architect.

Proposals should not be presented open-ended with expectations of the staff or Environmental Design Review Board to make decisions.

Additional information, drawings or other materials necessary to describe the project may be requested by the Planning Department or the Design Review Board depending on the nature of the project or site.

Also, depending on the projects nature, not all of the above requirements may be needed — the applicant should discuss proposed modifications with the Planning staff member assigned to the City’s Environmental Design Review.

The applicant may include additional information or materials such as sketches and models or photos if they help explain the proposal. Photos of the site and surrounding properties are always required.

All Hillside Residential Development projects on properties with the **HR** and **HRR** Land Use designations in the *General Plan 2000* should be prepared to go through the “Major” Environmental Design Review Process.

### PRELIMINARY REVIEW

Development proposals that elect the optional step of Preliminary Review or a request for waiver may submit drawings or other materials appropriate to the nature of the project and extent of planning studies completed. In most cases, site design, location of buildings, grading, basic form and height of buildings and landscape concepts will be important. Building elevations, perspectives and other information may be presented, but kept in preliminary form.

## **MINOR ENVIRONMENTAL DESIGN REVIEW**

### **I. Initial Submittal**

The following information and drawings shall be included upon initial submittal of an application:

- Application Form (including a detailed description of the project).
- Environmental Assessment Form (may be required)
- Geotechnical Review Information (may be required)
- Required Development Plans (4 copies)
- Site Photographs  
Showing subject property and buildings in relationship to the surrounding area. A panorama or aerial shot may be required.
- Preliminary Title report (may be required)  
Including property description, easements, deed restriction information and all conditions, covenants and restrictions.
- Filing Fees

### **II. Full Submittal**

After Planning Department Review of the Initial Submittal information and drawings for “completeness,” the following information and drawings shall be submitted prior to the project being accepted as complete for processing:

- Required Development Plans (10 Copies)
- Photo Montage and/or Model
- 8-1/2" x 11" transparencies and photo copy of each development plan as revised to incorporate City comments, is required for Planning Commission review.
- The Development Plans should contain the following information:

#### **a. Detailed Site Plan (drawn over the topographic map as a base)**

- Property lines and dimensions of the subject site and all adjacent properties, showing all easements.
- Boundary of all tree massing or tree cover.
- Location of all trees that are 6 inches or more in trunk diameter at a point 4'-6" above the root crown.
- Location of all shrub masses with a diameter of 10' or more, and all hedges with the height of 5' or more and a length of 15' or more.
- Existing trees and shrubs shall be labeled to be saved or removed.
- Dimensioned locations of all existing and proposed buildings and structures.
- Distances between buildings and/or structures.

- Building setbacks and required yard areas (front, rear and sides).
- Location, height and materials of walls and fences.
- Location of exterior light fixtures and typical lighting distribution, including specifications of light fixtures.
- Existing and proposed sidewalks, curbs, gutters, driveways, and paving widths.
- Location, dimensions, height of outdoor storage areas, trash enclosures and mechanical service areas.
- Site Plan summary with the following information:
  - a. Site coverage.
  - b. Gross Floor Area.
  - c. Lot coverage(%).
  - d. Gross Density.
  - e. Number of unit types, square footage by unit type, number of bedrooms, number of stories, and number of units per building.
  - f. Proposed landscape area (square footage and percentage)
  - g. Percentage of turf area within developed landscaped area.
  - h. Required and proposed number of parking spaces (covered and uncovered, as applicable).

**b. Landscape Plan (may be shown on site plan).**

- All existing and proposed improvements as shown on the detailed site plan; however, dimensions (such as setbacks and street widths) shall be excluded.
- Location of all proposed plantings.
- Plant legend identifying plant materials by form and function.
- Written description of irrigation concept consistent with Marin Municipal Water District Ordinance Number 285
- Landscape structures (e.g., arbors trellises, alcoves, and benches)

**c. Grading Plan (may be shown on site plan)**

- Proposed grading, including structures, curbs, retaining walls (show height), gutters, pavement, walks, swales, mounding, slopes, open space, trails, etc.
- Show all items (existing and proposed), clearly defined with distances, spot elevations, gradients, contours, details, cross-sections, drainage, flow arrows, etc. Existing improvements shall be designated with dashed lines, and proposed improvements shall be designated with solid lines. Include footprints of proposed structures.
- Easements, property lines, rights-of-ways.
- Quantities of cuts and fill (numeric calculations).
- Patterned or colored shading of cuts and fills (only 2 copies required)
- Drainage patterns and facilities
- Retaining walls, including top of wall and ground elevations.

**d. Illustrative Building Elevations**

- All side of existing and proposed building structures. Landscaping should not

obstruct the design of a building.

- Vertical dimensions, exterior materials, textures and colors of all proposed and existing buildings.
- Exterior materials to be used, including walls, glass (type/color), railings, detailing, fencing, signs, etc.
- Design of accessory structures, such as carports, trash enclosures, retaining walls, trellis, etc. Landscape materials should not hide design details.
- All superstructures, roof equipment, equipment screening and mechanical duct routing above the roof.

**e. Roof Plans (for all proposed structures)**

**f. Floor Plans (for all proposed structures)**

**g. Site Lighting Plan**

**h. Site Staking**

- Corners of building envelopes by stakes with flags.
- Building lot corners by stakes with flags.
- Location of proposed access roads and driveways by stakes with flags (may be required).
- The corners, height and the rooflines of the proposed building(s) by poles with flags (may be required).

**i. Arborist Report (may be required).**

**j. Biological Survey (may be required).**

**k. Drainage Report (may be required).**

**MAJOR ENVIRONMENTAL DESIGN REVIEW**

**I. Initial Submittal**

The following information and drawings shall be included upon initial submittal of an application.

- Application Form including detailed description of project.
- Environmental Assessment Form (may be required)
- Geotechnical Review Information (may be required)
- Hydrologic Review Information (may be required)
- Required Development Plans (4 copies)
- Building Materials Sample and Color Board
- Site Photographs showing subject property and buildings in relationship to the surrounding area. A panorama or aerial shot may be required.

- Preliminary Title Report (may be required)  
Including property description, easements, deed restrictions information and all conditions, covenants and restrictions.
- Filing Fees

## **II. Full Submittal**

1. Required development plans (17 copies)
2. Photo Montage and/or Model
3. Transparencies. An 8-1/2" x 11" transparency and photocopy of each development plan, as revised to incorporate City comments, is required for Planning Commission review. 10 sets of 1/2 size (11" x 17") plans will be required prior to Planning Commission review.

The following information should be included on the drawings submitted for Environmental design review.

### **a. Contextual Map (showing the relationship of the proposed project to the surrounding buildings and site features):**

- Vicinity Map, indicating site in relationship to major streets.
- Location of the site and relationship of the proposed project to existing and surrounding uses, noting all significant features, landscaping and topography.
- All buildings and streets within a 50' to 100' radius greater radius may be required); footprints, height, use, and zoning of adjacent structures.
- Adjacent access and circulation.
- All slope banks, ridgelines, natural drainage courses, rock outcroppings, and all mature trees as shown on the Natural Features Map.
- Surrounding public improvements including pavement width, medians, curb cuts and sidewalks.
- Driveways, parking and loading areas.
- Proposed and existing open space, and riparian areas.

### **b. Natural Features Map (site analysis of existing site conditions)**

- Basic site information (locate on drawing).
- Site boundaries with dimensions; building setback lines and easements.
- Sidewalks and public rights-of-way.
- Existing structures and other significant built improvements
- Existing Natural Features (locate on drawing):  
Trees 6 inches or more in trunk diameter measured at a point 4'-6" above the root crown. Note trunk size and species.
- Existing contours (typically at two to five foot intervals).
- All slope banks, including unstable slopes or areas of previous slide repair, ridgelines,

natural drainage courses, and rock outcroppings.

- Wetland and riparian areas.
- Existing structures outlined including drainage devices, public improvements and buildings.
- Boundary of all tree massing or tree cover.
- Location of all shrub masses with a diameter of 10' or more and all hedges with the height of 5' or more and length of 15' or more.
- Existing trees to be saved or removed.

**c. Detailed Site Plan:**

- Property lines and dimensions of the subject site and all adjacent properties, showing all easements.
- Dimensioned locations of all existing and proposed buildings and structures.
- Dimensioned locations of access for pedestrians, bicycles and vehicles, showing service areas, points of egress and ingress, public access to open spaces.
- Dimensioned locations of all off street parking and loading areas showing location, number and typical dimension of spaces, and wheel stop placement.
- Internal circulation patterns.
- Dimensioned locations of proposed subdivision building envelopes.
- Distances between buildings and/or structures.
- Building setbacks and required yard areas (front, rear and side).
- Location, height and materials of walls and fences.
- Location of exterior light fixtures and typical lighting distribution, including specifications of lighting fixtures.
- Existing and proposed sidewalks, curbs, gutters, driveways, and paving widths, on-site and all adjacent properties and properties across the street.
- Typical street section.
- Location and footprint of all buildings within 50' of the site.
- Existing sewers or nearest method of sewerage.
- Existing drainage courses or storm drains within approximately 50' of the site.
- Location of existing and proposed utilities (sewers, watermain, culverts, power and telephone lines) 50' to 100' from the site boundary.
- Site Plan summary with the following information:
  - a. Site coverage.
  - b. Gross Floor Area.
  - c. Lot coverage(%).
  - d. Gross Density.
  - e. Number of unit types, square footage by unit type, number of bedrooms, number of stories, and number of units per building.
  - f. Proposed landscape area (square footage and percentage)
  - g. Percentage of turf area within developed landscaped area.
  - h. Required and proposed number of parking spaces (covered and uncovered, as applicable).

**b. Landscape Plan (may be shown on site plan).**

- All existing and proposed improvements as shown on the detailed site plan; however, dimensions (such as setbacks and street widths) shall be excluded.
- Location of all proposed plantings.
- Plant legend identifying plant materials by form and function.
- Written description of irrigation concept consistent with Marin Municipal Water District Ordinance Number 285
- Building footprint and roof outlines, including eave overhangs.
- Private walkways, walls and courtyards.
- Berms and/or mounding areas, ground cover areas, areas of rock, gravel or stone; shrub locations; accent and street trees; slope planting materials; retaining walls; private yard areas; landscape lighting; and other elements necessary to show the landscape concept.
- Landscape structures (e.g., arbors trellises, alcoves, and benches)
- Community amenities, common or public recreation, primary and secondary entry point treatment, emergency vehicle access, public walkways and other elements necessary to show the community amenities.
- Location of all ground mounted mechanical or utility equipment and method of screening.

**c. Conceptual Grading Plan**

- The Planning Department may require major projects to show existing conditions on 50% half-tone screen base with proposed improvements drawn on the base. If a project is to be phased, separate grading plans may be required for each phase.
- Existing features (natural ground, trees, structures, drainage courses, streets, trails, slopes, etc.) on site and within approximately 50' of project site labeled to remain or be removed.
- Natural areas to be preserved.
- Contour grading will be required wherever practical.
- Show all items (existing and proposed) listed below, clearly defined with distances, spot elevations, gradients, contours, details, cross-sections, drainage flow arrows, etc. Existing Improvements shall be designated with dashed lines and proposed improvements shall be designated with solid lines. Include footprints of proposed structures.
- Easements, property lines, rights-of-way.
- Contour lines approximately 50' beyond boundary subject site.
- Maximum contour intervals shall conform to the following table:

Slope	Under 5%	5%-20%	Over 20%
Interval	2'	5'	10'
- Proposed grading, including structures, curbs, retaining walls (show height), gutters, pavement, walks, swales, mounding, slopes, open space, trails, etc.
- Subdivisions show grading for streets, drainage, and trails only. Provide a separate plan showing future house plotting and lot grading to be completed on a lot-by-lot basis.

- Quantities of cuts and fills (numeric calculations).
- Patterned or colored shading of cuts and fills (only 2 copies required).
- Illustrations of separate cut and fill areas with a line.
- Potential source/destination of fill excavation in excess of 10,000 CY.
- Erosion control measures.
- Sections on slopes over 10%.
- Cross-sections at all site boundaries (maximum and minimum conditions).
- Drainage patterns.
- Drainage facilities.
- Parkway culverts where drainage is directed to streets.
- Location, elevation and size of proposed building pads.
- Streets, including cross-sections, improvements, right-of-way, etc.
- Shade or screen with different screens or shades pavement areas and slopes of: 1%-25%; 25%-35%; 35%-50%; and over 50%.
- Retaining walls, including top of wall and ground elevations

#### **d. Illustrative Building Elevations**

- All side of existing and proposed building structures. Landscaping should not obstruct the design of a building.
- Vertical dimensions, exterior materials, textures and colors of all proposed and existing buildings.
- Exterior materials to be used, including walls, glass (type/color), railings, detailing, fencing, signs, etc.
- Design of accessory structures, such as carports, trash enclosures, retaining walls, trellis, etc. Landscape materials should not hide design details.
- Shadows which depict the true building profiles and dimensions (45 azimuth and altitude). Allow building design to read through shadows.
- All superstructures, roof equipment, equipment screening and mechanical duct routing above the roof.
- If an addition to an existing building is proposed, show the elevations of the existing buildings together with those of the addition.

#### **e. Roof Plans (for all proposed structures)**

- Basic site plan elements and property lines.
- Direction and slope of drainage.
- Drainage collectors.
- Location of rooftop mechanical equipment and method of screening.
- Outline of building footprint below.
- Differentiate between levels for structures with multiple roof levels.

#### **f. Floor Plans (for all proposed structures)**

- Square footage.
- Perimeter dimensions.

- Exterior materials.
- Glass Areas.
- Exits.
- Above grade extensions, such as balconies or decks.

**g. Site Lighting Plan**

**h. Phasing Plan**

- Required for phased projects, indicating the limits of the phasing.

**i. Site Staking**

- Corners of building envelopes by stakes with flags.
- Building lot corners by stakes with flags.
- Location of proposed access roads and driveways by stakes with flags (may be required).
- The corners, height and the rooflines of the proposed building(s) by poles with flags (may be required).

**j. Arborist Report (may be required).**

**k. Biological Survey (may be required).**

**l. Drainage Report (may be required).**



# Appendix B

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## PLANT SELECTION GUIDE

The shrubs and trees listed within this appendix are a reflection of the design goals stated in guideline A8, "Planting Design for Hillsides." They are listed, in matrix form, by uses. Other Trees and shrubs not listed here may accomplish the desired goals, and if so, are encouraged also.

To use this Appendix, determine the use of the tree or shrub and find the appropriate heading at the top of the matrix. Please consult the Sunset Western Garden Book for additional information about each plant.

The first list is a Tree List which includes Drought Tolerant and Low Fuel Volume Trees for use in high fire hazard areas.

The second list is a Shrub List. Nerium oleander has toxic foliage but is included in the Appendix because of its other excellent qualities. Its use is encouraged where toxic foliage will not present a hazard. Size considerations are important for shrubs: use low creeping varieties for groundcovers; medium shrubs and large sized shrubs can be used for screening, accents and spatial definition. Note the list of Drought Tolerant shrubs. The Ribes and Rhus species have deciduous habits; all others are evergreen.

Please note the Low Fuel Volume Shrubs for use in high fire hazard areas. All of these shrubs are low growing and can exist with little summer irrigation.

**APPENDIX B**  
**GENERAL HILLSIDE PLANT LIST FOR**  
**SAN RAFAEL CLIMATE ZONE**

BOTANICAL NAME	COMMON NAME	Drought Toleran	Screen Backgrnd.	Slope/ Ero.Cont.	Low Fuel Volume	Drainage Ravine	Deer Resistant	Freeze Damaged
<b>TREES:</b>								
<i>Aesculus californica</i> *	California Buckeye	X		X		X	X	
<i>Ailanthus altissima</i>	Tree of Heaven	X					X	
<i>Alnus cordata</i>	Italian Alder					X	X	
<i>Arbutus unedo</i> *	Strawberry Tree	X	X	X	X	X		
<i>Cedrus deodara</i>	Deodar Cedar	X	X				X	
<i>Ceratonia siliqua</i>	Carob Tree	X			X			X
<i>Cercis occidentalis</i> *	Western Redbud	X		X	X	X	X	
<i>Cupressocyparis leylandii</i>	Leyland Cypress	X	X	X			X	
<i>Eriobotrya japonica</i>	Loquat	X						
<i>Eucalyptus lehmannii</i>	Bushy Yate	X	X				X	
<i>Eucalyptus sideroxylon</i>	Pink Iron Bark	X	X	X			X	
<i>Fraxinus</i> o. 'Raywood'	Raywood Ash	X						
<i>Geijera parviflora</i>	Australian Willow	X					X	
<i>Leptospermum laevigatum</i>	Australian Tea Tree	X					X	
<i>Leptospermum scoparium</i>	New Zealand Tea Tree	X					X	X
<i>Liquidambar styraciflua</i>	Sweet Gum						X	
<i>Lyonothamnus</i> f.'Asplenifolius**	Fernleaf Ironwood	X	X				X	
<i>Maytenus boaria</i>	Mayten Tree	X					X	
<i>Melia</i> a. 'Ubraculiformis'	Texas Umbrella Tree	X					X	
<i>Melaleuca linariifolia</i>	Flaxleaf Paperbark	X					X	X
<i>Metrosideros excelsus</i>	New Zealand Christmas Tree	X			X		X	
<i>Myoporum laetum</i>	Myoporum		X	X	X		X	X
<i>Olea europea</i>	European Olive	X					X	
<i>Pinus pinea</i>	Italian Stone Pine	X	X	X			X	
<i>Pistacia chinensis</i>	Chinese Pistache	X					X	
<i>Platanus</i> a.'Bloodgood'	London Plane Tree					X	X	

\* DENOTES NATIVE SPECIES

BOTANICAL NAME	COMMON NAME	Drought Toleran	Screen Backgrnd.	Slope/ Ero. Cont.	Low Fuel Volume	Drainage Ravine	Deer Resistant	Freeze Damaged
<i>Populus fremonti</i> *	Fremont Poplar		X			X	X	
<i>Prunus caroliniana</i>	Carolina Cherry	X	X	X	X	X	X	
<i>Prunus lyonii</i> *	Catalina Cherry	X	X	X	X	X	X	
<i>Pyrus c. 'Bradford'</i>	Bradford Pear						X	
<i>Quercus agrifolia</i> *	Coast Live Oak	X		X		X	X	
<i>Quercus chrysolepis</i> *	Canyon Live Oak	X				X	X	
<i>Quercus ilex</i>	Holly Oak	X					X	
<i>Rhus lancea</i>	African Sumac	X			X		X	
<i>Robinia a. 'Idahoensis'</i>	Idaho Locust	X					X	
<i>Schinus terebinthifolius</i>	Brazilian Pepper	X			X		X	
<i>Sequoia sempervirens</i> *	Coast Redwood		X	X		X	X	
<i>Tilia e. 'Redmond'</i>	Crimean Linden						X	
<i>Tristania laurina</i>	Swamp Myrtle	X					X	
<i>Umbellularia californica</i> *	California Laurel	X		X		X	X	

#### SHRUBS:

<i>Abelia grandiflora</i>	Glossy Abelia			X				
<i>Acacia decurrens</i>	Green Wattle	X			X			X
<i>Agonis flexuosa</i>	Peppermint Tree	X	X					
<i>Arbutus u. 'Compacta'</i>	Dwarf Strawberry Tree	X	X		X	X	X	
<i>Arctostaphylos spp.*</i>	Manzanita	X		X	X	X		
<i>Berberis thunbergii</i>	Japanese Barberry						X	
<i>Caesalpinia spp.</i>	Bird of Paradise	X						
<i>Callistemon citrinus</i>	Lemon Bottlebrush	X	X				X	
<i>Ceanothus spp.*</i>	Ceanothus	X		X	X		X	
<i>Chaenomeles spp.</i>	Flowering Quince			X			X	
<i>Chamelaucium uncinatum</i>	Waxflower		X	X				
<i>Cistus spp.</i>	Rockrose	X		X	X		X	
<i>Cotoneaster spp.</i>	Cotoneaster			X			X	
<i>Daboecia cantabrica</i>	Daboecia			X	X			
<i>Diosma pulchra</i>	Pink Diosma			X				

BOTANICAL NAME	COMMON NAME	Drought Toleran	Screen Backgrnd.	Slope/ Ero.Cont.	Low Fuel Volume	Drainage Ravine	Deer Resistant	Freeze Damaged
<i>Dodonaea viscosa</i>	Hopseed Bush		X	X			X	
<i>Echium fastuosum</i>	Pride of Madeira	X		X			X	
<i>Elaeagnus pungens</i>	Silverberry	X	X	X			X	
<i>Escallonia</i> spp.	Escallonia		X					
<i>Fallugia paradoxa</i> *	Apache Plume	X		X				
<i>Feijoa sellowiana</i>	Pineapple Guava	X	X	X	X			
<i>Fremontodendron</i> spp.*	Flannel Bush	X	X	X				
<i>Garrya fremontii</i> *	Coast Silk Tassle	X	X	X	X			
<i>Grevillea canberra</i>	Grevillea		X	X			X	
<i>Heteromeles arbutifolia</i> *	Toyon	X	X	X	X	X	X	
<i>Juniperus</i> spp.	Juniper	X		X			X	
<i>Lonicera pileata</i>	Privet Honeysuckle		X	X				
<i>Mahonia</i> spp.*	Mahonia			X			X	
<i>Myrica californica</i> *	Pacific Wax Myrtle	X	X	X			X	
<i>Nandina domestica</i>	Heavenly Bamboo		X				X	
<i>Nerium oleander</i>	Oleander	X	X	X	X		X	X
<i>Photinia fraseri</i>	Photinia		X					
<i>Pittosporum</i> t.'Wheeler's Dwarf'	Dwarf Pittosporum				X			
<i>Pittosporum tenuifolium</i>	Pittosporum		X		X			
<i>Plumbago auriculata</i>	Cape Plumbago	X	X	X			X	
<i>Prunus ilicifolia</i> *	Holly Leaf Cherry	X	X	X	X			
<i>Rhamnus californica</i> *	California Coffeeberry	X	X	X	X			
<i>Rhapiolepis indica</i>	Pink India Hawthorn	X		X				
<i>Rhus integrifolia</i> *	Lemonade Berry	X	X	X	X		X	
<i>Rosmarinus 'Prostratus'</i>	Rosemary	X		X	X		X	
<i>Sophora secundiflora</i>	Mountain Laurel	X	X	X				
<i>Symphoricarpos albus</i> *	Common Snowberry	X		X	X	X		
<i>Trichostema lanatum</i>	Wooly Blue Curls	X		X	X			
<i>Xylosma congestum</i>	Shiny Xylosma		X	X				

BOTANICAL NAME	COMMON NAME	Drought Toleran	Screen Backgrnd.	Slope/ Ero.Cont.	Low Fuel Volume	Drainage Ravine	Deer Resistant	Freeze Damaged
<b>VINES:</b>								
Bougainvillea spp.	Bougainvillea	X		X			X	X
Clytostoma callistegioides	Lavender Trumpet Vine							X
Gelsemium sempervirens	Carolina Jessamine						X	
Hibbertia scandens	Guinea Gold Vine						X	
Jasminum polyanthum	Pink Jasmine						X	X
Rosa 'Cecile Brunner'	Cecile Brunner Rose	X		X				
Solanum jasminoides	Potato Vine	X					X	X
Wisteria sinensis	Chinese Wisteria	X					X	

**GROUND COVER/PERENNIALS:**

Acacia redolens	Acacia	X		X	X			
Achillea tomentosa	Wooly Yarrow	X			X		X	
Agapanthus spp.	Lily of the Nile				X		X	X
Arctostaphylos 'E. Carpet'	Manzanita	X		X				
Baccharis p. 'Twin Peaks'	Dwarf Coyote Bush	X		X	X		X	
Ceanothus spp.*	Ceanothus	X		X	X		X	
Centaurea cineraria	Dusty Miller							
Chorizema cordatum	Flame Pea			X				
Cistus salviifolius	Sageleaf Rockrose	X		X	X		X	
Convolvulus cneorum	Bush Morning Glory	X		X	X			
Coprosma kirkii	Creeping Coprosma	X		X	X		X	
Correa pulchella	Australian Fuchsia			X			X	X
Cotoneaster spp.	Cotoneaster			X	X		X	
Daboecia spp.	Daboecia			X				
Dietes vegeta	Fortnight Lily						X	
Gazania 'Mitsuwa Yellow'	Gazania	X		X	X			
Hemerocallis hybrids	Daylily			X	X		X	
Hypericum calycinum	St. John's Wort			X	X		X	
Iris douglasiana*	Douglas Iris	X					X	
Lantana montevidensis	Trailing Lantana			X			X	X

BOTANICAL NAME	COMMON NAME	Drought Toleran	Screen Backgrnd.	Slope/ Ero.Cont.	Low Fuel Volume	Drainage Ravine	Deer Resistant	Freeze Damaged
Lavandula spp.	Lavender	X					X	X
Lobularia maritima	Sweet Alyssum							
Myoporum parvifolium	Myoporum	X		X	X			X
Narcissus spp.	Daffodil						X	
Oenothera berlandieri	Mexican Evening Primrose	X						X
Osteospermum fruiticosum	African Daisy			X	X			
Ribes viburnifolium*	Evergreen Currant	X		X		X	X	
Salvia leucantha*	Creeping Sage	X		X	X		X	
Santolina virens	Santolina			X	X		X	
Sollya heterophylla	Australian Bluebell	X		X			X	X
Trachelospermum jasminoides	Star Jasmine			X			X	
Vinca spp.	Periwinkle			X	X		X	
Zauschneria californica*	California Fuchsia	X		X	X		X	

\* Indicates native California species.

# Appendix C

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## PLANNING DEPARTMENT PROCEDURES FOR GEOTECHNICAL/HAZARDOUS SOILS REVIEW

A. Purpose: The General Plan Health and Safety Element requires geotechnical studies for development proposals to determine the actual extent of geotechnical hazards, optimum location for structures, the advisability of special structural requirements, and the feasibility and desirability of a proposed facility at a specified location (Policy S-4). The requirements for geotechnical investigations are set forth in the Geotechnical Review Matrix (Appendix E).

### B. Processing Geotechnical Review

- 1) When handing out an application for a master plan zoning, subdivision, conditional certificate of compliance, design review, or use permit/grading permit, the planner reviews the Relative Geoseismic Hazards and Relative Slope Stability Maps which are located on the wall by the hall.

Sites which are rated 3 or 4 (most hazardous) on either Geoseismic Hazard or Slope Stability map will require a *Geotechnical Investigation Report* as part of the materials needed for completeness. Geologic reports must be prepared by a Certified Engineering Geologist and soil engineering reports must be prepared by a Registered Geotechnical Engineer. Appendix E contains the specific report requirements.

Sites which are rated 1 or 2 require a *Preliminary Geologic Report* (as defined in Appendix E) before the application is considered complete. A Geotechnical Investigation may be required if the use is 1) considered to be critical use as defined in the Geotechnical Review Matrix, or 2) is downslope of possible debris flow avalanche areas (areas rated as a category 4).

- 2) The required report must be submitted before the application is deemed complete. A fee is charged for review of the reports.
- 3) The report is referred to the Senior Engineer. Reports for high hazard areas must be reviewed by private Geotechnical Review Board. The Public Works Department hires the geotechnical firms to review reports and additional information or additional mitigation measures may be required. 8-12 weeks may be required for the review process.
- 4) Reports in areas rated 1 or 2 are generally reviewed by the Senior Engineer.
- 5) A written response on the geotechnical review must be received before the environmental review is completed and the item scheduled for a hearing.

### C. Processing Hazardous Soils Reports

- 1) The planner reviews Map GP-22 to determine whether the site is located on artificial fill or on land which has been used by commercial businesses.
- 2) If the site was a service station site, or if it is located on the areas identified on Map GP-22, require a report reviewing historical land uses, nature of fill and site characteristics for evidence of potential hazardous materials. The report is required as part of the submittal.
- 3) The Fire Prevention Officer will review this report and determine whether a Hazardous Waste Investigation Report is required. Contents of the report are outlined in Appendix B.
- 4) A written response on the hazardous soils review must be received before the environmental review is completed and the item scheduled for a hearing.

Note: For a General Plan amendment, annexation, lot line adjustment, general rezoning, variance or open space dedication request, staff may require geotechnical or hazardous soils review upon consultation with the Senior Engineer or the Fire Prevention Officer.

# Appendix D

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## DRAINAGE REPORT REQUIREMENTS

Section A3 of the Hillside Residential Design Guidelines Manual establishes guidelines for grading and drainage. Subdivision applications must include a detailed hydrology report and hydraulic analysis prepared by a California-registered civil engineer experienced in hydrology and hydrologic investigation. The report shall include, but not be limited to, the following information:

### A. Project/Site Description

- 1) Identify hydrologic conditions on the site, including natural drainage courses, below ground springs, the location of all wells, flood hazards, and areas of debris flow;
- 2) Identify hydrologic conditions of the drainage basin, including creek morphology;
- 3) Identify downstream flood hazards;
- 4) Identify location of existing and proposed drainage facilities.

### B. Project Assessment

- 1) Possible flood inundation with existing development and with future development under the General Plan;
- 2) Hydraulic capacity of proposed and existing downstream drainage facilities;
- 3) Cumulative impacts of development in the drainage basin;
- 4) Cumulative impacts from potential runoff and from debris from tributary areas;
- 5) Other cumulative impacts as well as consideration for each lot or dwelling unit site.
- 6) The report shall include all maps, calculations and criteria upon which the analysis is based.

### C. Recommendations

- 1) Conclusions and recommendations regarding the effect of hydrologic conditions on the proposed project and the proposed drainage system;
- 2) Opinions and recommendations covering the adequacy of the sites to be developed;
- 3) Design criteria to mitigate any identified hydrologic hazards, including cumulative impacts on proposed and existing downstream systems.

The applicant may be required to provide a second opinion from a City-approved civil engineer, at the discretion of the Public Works Department.



# Appendix E

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## BIOLOGICAL SURVEY REQUIREMENT

Section C2 of the Residential Design Guideline Manual establishes guidelines for development in riparian and watershed areas and Section A8 outlines criteria for development in hazardous fire areas. A detailed report prepared by a qualified biologist may be required to determine compliance with these guidelines. The report shall include the following information:

### A. Project Description

- 1) Identify the type(s) of plant and animal habitats found on the site with an accompanying map delineating habitat location(s);
- 2) Identify the plant and animal species, including rare and endangered species, found on the site with a map showing their habitat locations;
- 3) Identify any wildlife corridors;
- 4) Identify vegetation areas with high fire hazards;
- 5) Describe the method of survey.

### B. Project Assessment

- 1) Describe and assess potential impacts of the development on the habitats;
- 2) Evaluate the adequacy of proposed wetlands, creek and drainageway setbacks;
- 3) Evaluate compatibility of proposed landscaping materials;
- 4) Identify riparian, wetlands or other habitats needing enhancement to provide productive habitat values;
- 5) Evaluate potential fire hazards.

### C. Recommendations

- 1) Establish mitigation measures, such as buffer area and/or greater setbacks from the habitat and modifications to proposed siting, lot design, building envelopes, vegetation removal and grading which will reduce impacts and allow for the habitat's long-term maintenance.
- 2) Indicate any needed modifications to proposed landscaping plans;
- 3) Establish appropriate planting materials which will enhance and protect habitat values;
- 4) List mitigation measures which will reduce fire hazards while protecting habitat values;
- 5) Determine whether mitigation measures will reduce the development's impact to an insignificant level at which the long-term maintenance of the habitat is assured.



# Appendix F

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## ARBORIST/FORESTER'S REPORT REQUIREMENTS

Section A2 of the Residential Design Guidelines Manual establishes guidelines for the preservation of significant trees. A detailed report prepared by an arborist or forester may be required to determine compliance with these guidelines. The report shall include the following information:

### A. Project Description

- 1) Vegetation type, condition, and health.
- 2) Tree removal (as keyed to the site plan). Types, amount and sizes of trees to be removed and reason for removal.
- 3) Trees with grading under dripline (as keyed to the site plan).

### B. Project Assessment

- 1) Health of trees proposed for removal.
- 2) Hazardous trees on the project site.
- 3) Fire hazards.
- 4) Grading impacts on tree health and survival.
- 5) The number of healthy trees the parcel or area can support.
- 6) Impacts from proposed landscaping and irrigation.

### C. Recommendations

- 1) Alternatives, such as modification in the development siting, bulk, or design to minimize removal of significant trees.
- 2) Measures to minimize grading impacts.
- 3) Pruning and/or tree removal needed to prevent hazards from fire or tree/limb falling.
- 4) Number, type, size and locations of replacement trees.
- 5) Thinning needed to promote the growth of trees.
- 6) Other management measures, such as removal of exotic plants, needed for a health forest.
- 7) Modifications to landscaping plans to maintain tree health.
- 8) Methods to protect trees during construction activities.



# Appendix G

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## SURVEY OF REPRESENTATIVE SITES



## Hillside Residential Site Review Summary

**1**

Assessor's Parcel Number	Gross Acreage	General Plan Land Use Designation	Geoseismic/ Slope Stability Hazards	General Environmental Character
Southern Heights West End Area  12-272-01		Hillside Residential		Oak woodland/redwood grove 1 dwelling unit/acre, slope less than 35%. Part of site is visible from community. North exposure
12-093-09	1.65 Acres	Hillside Residential		Oak woodland/redwood groves Not visible from community Adjacent ot vacant parcel North exposure
100 3 Southern Heights Bret Harte Area  13-271-21	14.8 Acres	Hillside Resource Residential	Geoseismic Hazard - 3 Slope Stability - 4	Oak woodland. Over 40% slope Upper portion of site is highly visible from community. Density projection 1-7 dwelling units (.5 is mid-range). Poor access North exposure
3 13-271-30	4.5 Acres	Open Space	Geoseismic Hazard - 3 Slope Stability - 3	Oak woodland Slope 20%-40% Not visible from community Poor access North exposure

## Hillside Residential Site Review Summary

Assessor's Parcel Number	Gross Acreage	General Plan Land Use Designation	Geoseismic/ Slope Stability Hazards	General Environmental Character
<p>Southern Heights Bret Harte Area</p> <p>13-271-17</p>	14.39 Acres	Hillside Resource Residential	Geoseismic Hazard -3 Slope Stability - 4	<p>Oak woodland/redwood grove Over 40% slope. Upper part of site highly visible from community Density projected 1-7 dwelling units (.9 is mid-range) Poor access North exposure</p>
<p>Dominican/Black Canyon Area</p> <p>15-251-01</p>	7.6 Acres	Hillside Residential	Geoseismic Hazard - 3 Slope Stability - 4	<p>Moderate to steep slope Not visible from community Density projected 3-14 dwelling units (Located off of Glen Park)</p>
<p>15-01-44</p>	17.9 Acres	Hillside Residential	Geoseismic Hazard - 4 Major Part Slope Stability - 2, 3	<p>Generally over 40% slope 33% in proposed development area Greater than 60% elsewhere Not visible from neighborhoods Visible from 101 Poor access Southwest exposure</p>

## Hillside Residential Site Review Summary

Assessor's Parcel Number	Gross Acreage	General Plan Land Use Designation	Geoseismic/ Slope Stability Hazards	General Environmental Character
5 Gold Hill Grade 15-251-57	4.03 Acres	Hillside Residential	Geoseismic Hazard - 4 Slope Stability - 4	*Slide area. Slope 35%-60%+. 60% average slope. Visible from community. South exposure.
5 15-251-58	4.96 Acres	Hillside Residential	Geoseismic Hazard - 3 Slope Stability - 4	*Partial slide area. Slope 35%-50%+. Visible from community. South exposure.
5 15-250-55	16.87 Acres	Hillside Resource Residential	Geoseismic Hazard -3 Slope Stability - 3	*Slope 35%. Highly visible from community. Projected density 1-8 dwelling units. South exposure.
5 15-250-28	9.7 Acres	Hillside Resource Residential	Geoseismic Hazard - 3 Slope Stability - 3	*35% slope. Highly visible from community. Projected density 1-2 dwelling units.
5 15-250-34	2.62 Acres	Hillside Resource Residential		*No access.
5 15-251-56	13.61 Acres	Hillside Resource Residential	Geoseismic Hazard - 4 Slope Stability - 4	*Over 40% slope. Visible from community. South exposure.

\* Note: Mixed  
Oak Savannah  
Oak Woodland  
Small Canyons  
Rock Outcroppings

## Hillside Residential Site Review Summary

	Assessor's Parcel Number	Gross Acreage	General Plan Land Use Designation	Geoseismic/ Slope Stability Hazards	General Environmental Character
5	Gold Hill Grade 15-091-15	4.93 Acres	Hillside Residential	Geoseismic Hazard - 2,3,4 Slope Stability - 2,3,4	*Slope 20%-50%, average slope 35% Upper parts visible from community. Access difficult but possible.
5	15-091-03	3.0 Acres	Hillside Residential	Geoseismic Hazard - 3 Slope Stability - 4, Some 1,2	*Slope 28%-35%. Upper parts visible from community.
6	North of Downtown 179-232-07	1.176 Acres	R1 B4		Shown as low density residential on General Plan.
7	11-011-27 89 Chula Vista	2.1 Acres	Hillside Residential		
8	11-071-08 150 Coleman	3.4 Acres	Low Density Residential	Slope - 3 Geoseismic Hazard - 4	
9	11-131-04	10.56 Acres	High Density Residential	Slope - 3 Geoseismic Hazard - 4	Adjacent to Boyd Memorial Park Elks Lodge
10	180-121-43 Screttni	52.88 Acres	Hillside Residential	Geoseismic Hazard - 4 Slope - 4	
11	165-010-77	8.8 Acres	Hillside Resource Residential	Geoseismic Hazard - 4 Slope 3,4	
12	10-011-48	2.7 Acres	Hillside Residential		Oak View Ridge Area
12	10-011-49	2.7 Acres	Hillside Residential		Oak View Ridge Area
13	11-05-23 The Quarry Site	30 Acres	Hillside Resource Residential	Slope - 3, Some 4 Geoseismic Hazard - 3, Some 4	<u>* Note:</u> Mixed Oak Savannah Oak Woodland Small Canyons Rock Outcroppings

1

A.P. No. 12-272-01

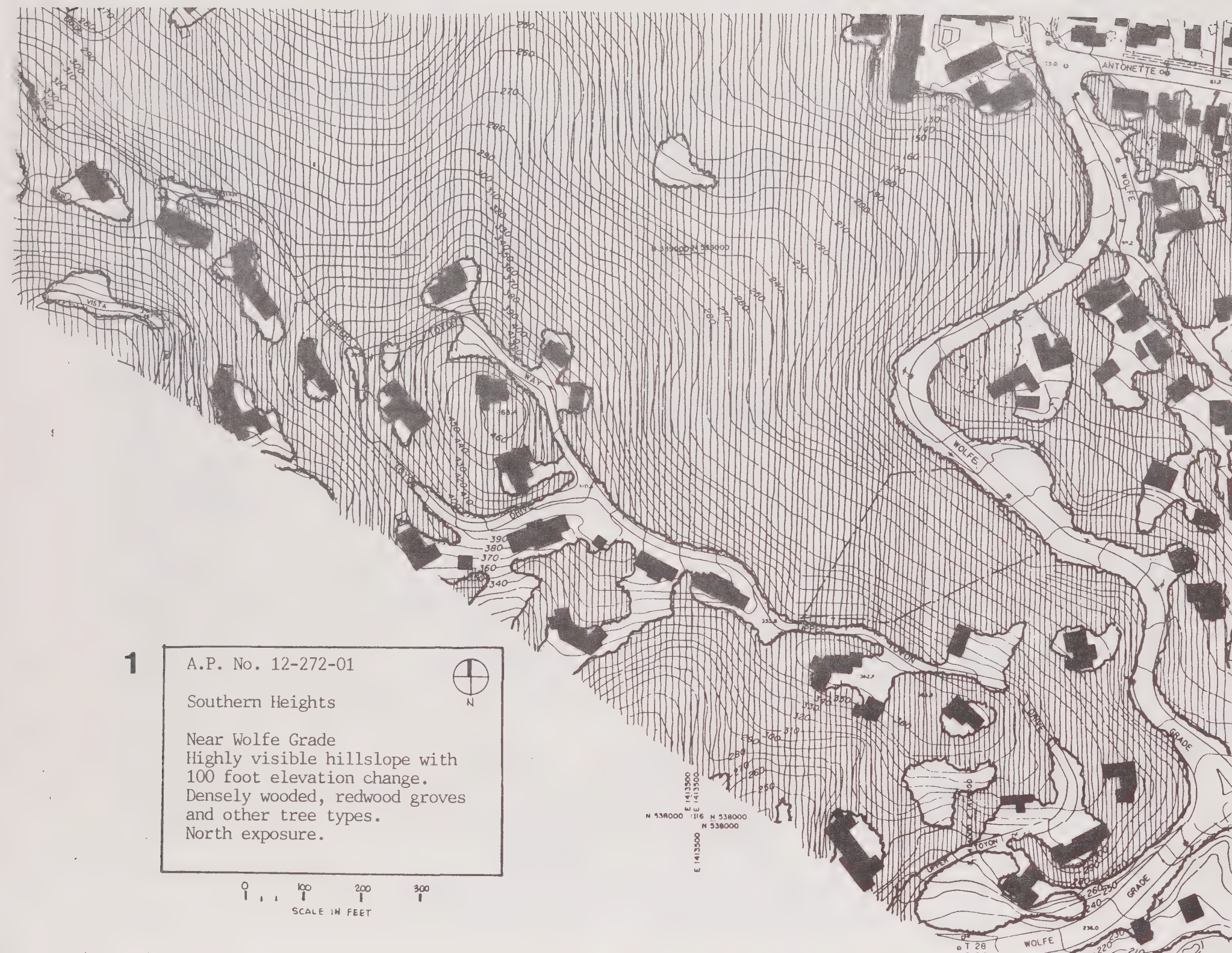
## Southern Heights

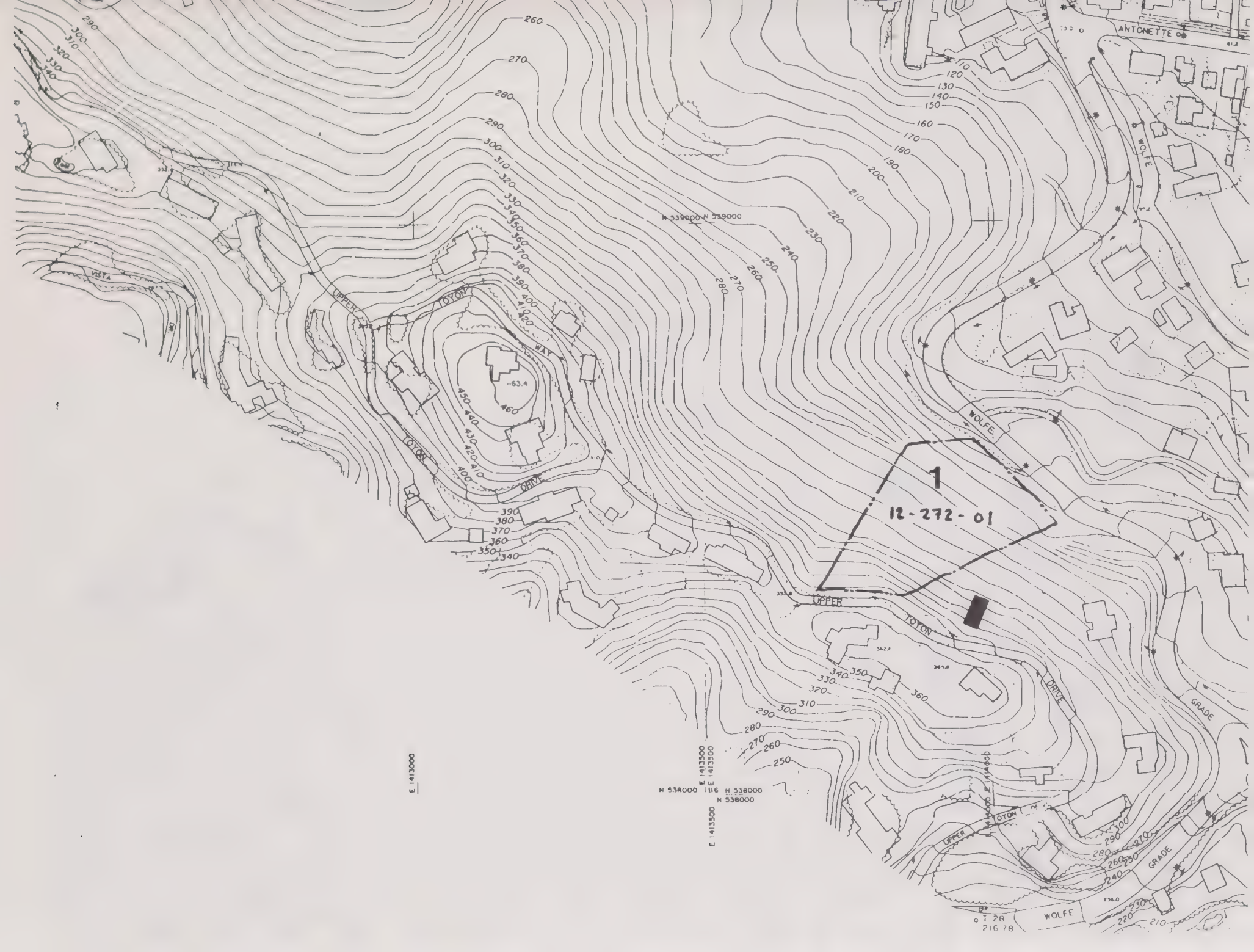
Near Wolfe Grade  
 Highly visible hillslope with  
 100 foot elevation change.  
 Densely wooded, redwood groves  
 and other tree types.  
 North exposure.



0 100 200 300  
 SCALE IN FEET

E 1413500  
 N 538000  
 E 1413500  
 N 538000





E 1413000

E 1413500  
N 538000  
E 1413500  
N 538000  
E 1413500  
N 538000

1 28  
216 78

E 1409000 E 1409000

2

A.P.No. 12-093-09  
Southern Heights  
West End Neighborhood



Redwood Groves, mixed tree types.  
Steep Hillside.  
Adjacent to Vacant parcel.  
North exposure.  
End of Westwood Avenue.  
Single family residential  
Neighborhood.

0 100 200 300  
SCALE IN FEET





E 409000 E 409000



3

A. P. Numbers

13-271-17

13-271-21



Bret Harte Neighborhood

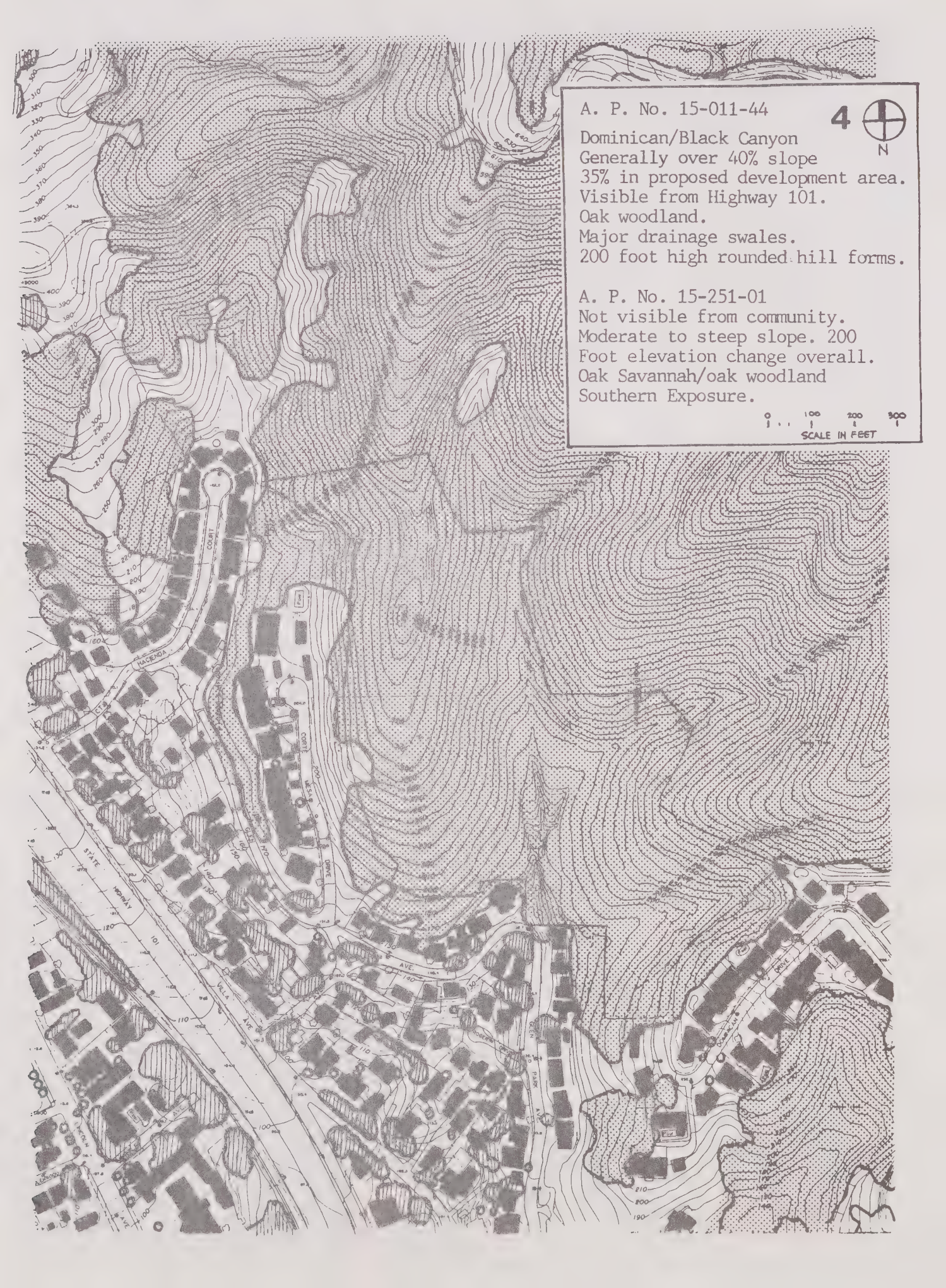
Dense North facing woodland slope. Redwood Groves.

Over 40% slope.

Upper portion of both sites are highly visible from the community. Adjacent to single family residential development at top and bottom of slope.

0 100 200 300  
SCALE IN FEET





A. P. No. 15-011-44



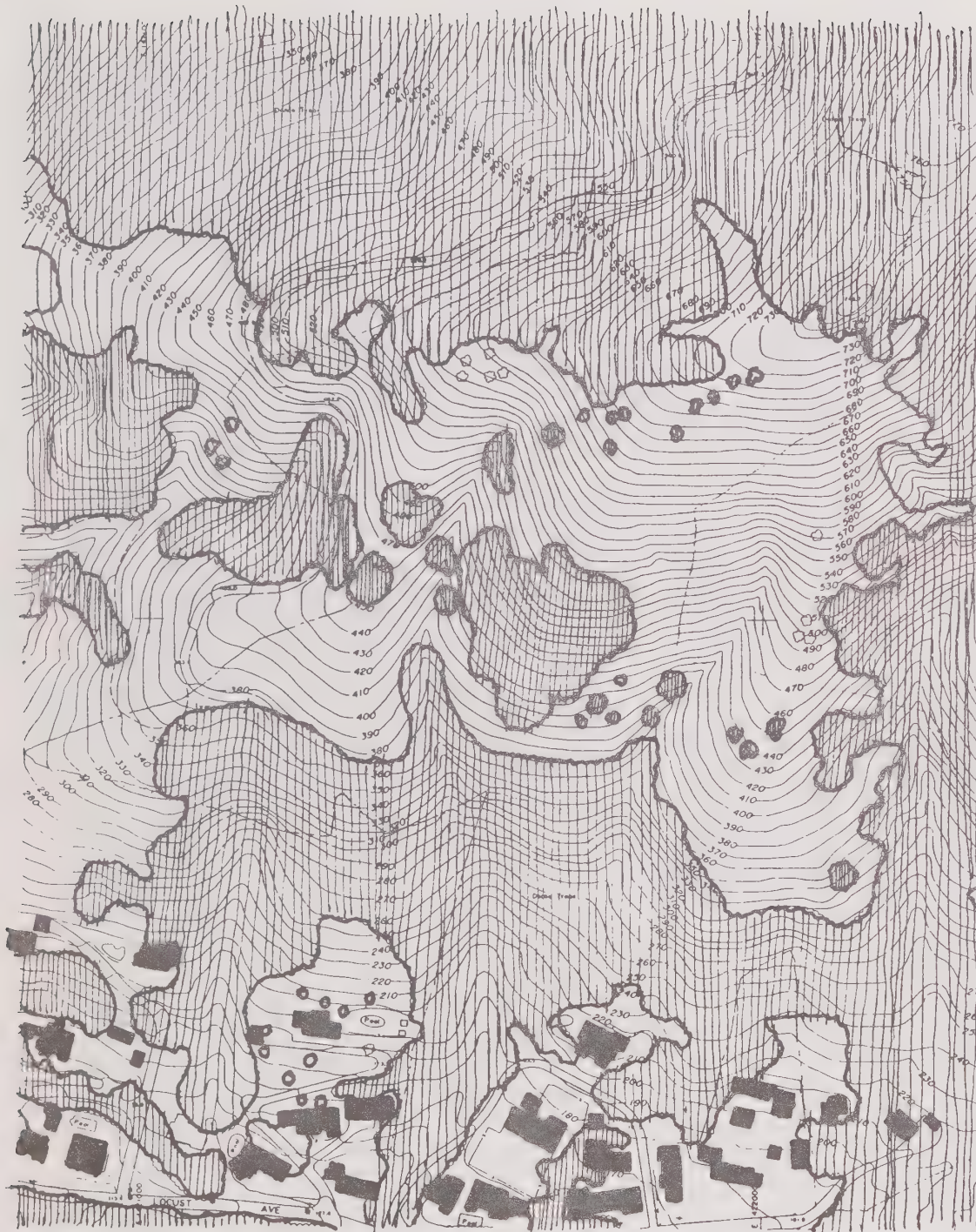
Dominican/Black Canyon  
Generally over 40% slope  
35% in proposed development area.  
Visible from Highway 101.  
Oak woodland.  
Major drainage swales.  
200 foot high rounded hill forms.

A. P. No. 15-251-01

Not visible from community.  
Moderate to steep slope. 200  
Foot elevation change overall.  
Oak Savannah/oak woodland  
Southern Exposure.

0 100 200 300  
SCALE IN FEET





### A. P. Numbers

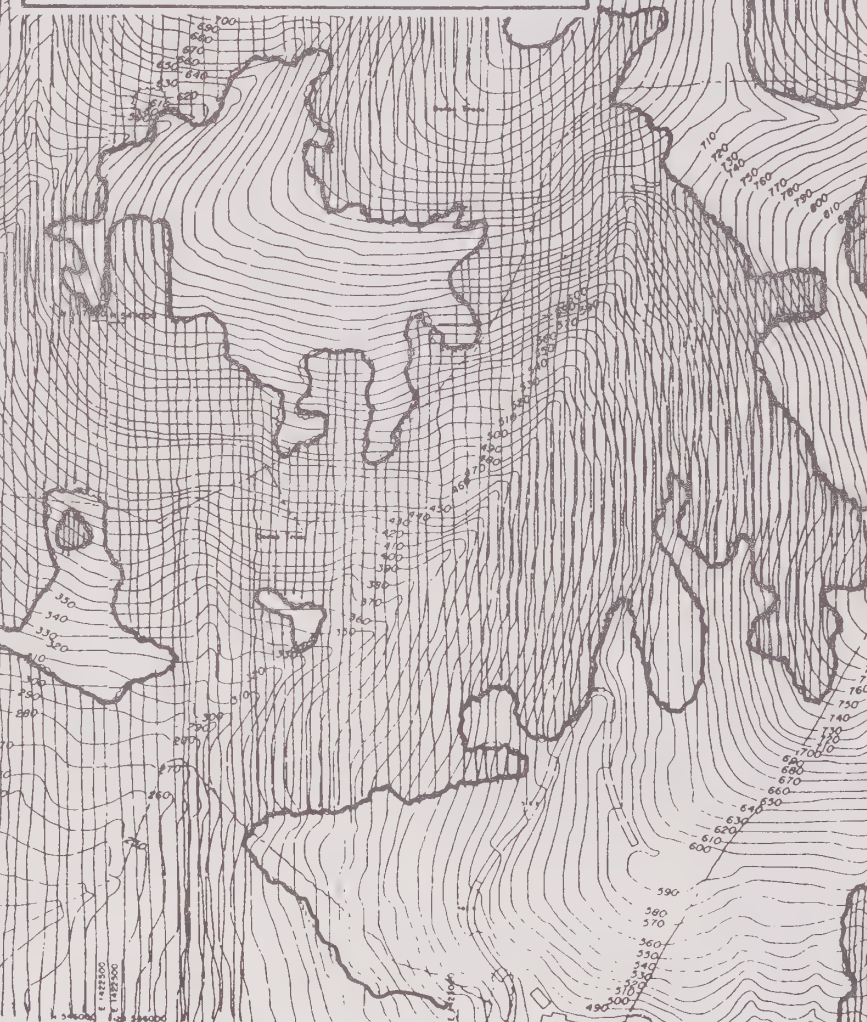
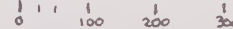
15-251-57  
15-251-58  
15-250-55  
15-250-28  
15-250-34  
15-251-56

5

All parcels are adjacent.  
Mixed Oak savannah with Oak Woodland in small canyons and major drainage swales  
Rock outcroppings.  
very steep open grassland slopes.



SCALE IN FEET







A. P. No. 179-232-07  
Los Ranchitos area



Steep Hillside, including a  
ridgeline feature.  
Portions are densely wooded.  
Highly visible from nearby  
neighborhoods and from 101.

0 100 200 300  
SCALE IN FEET





7 A.P. No. 11-011-27  
Los Ranchitos Neighborhood

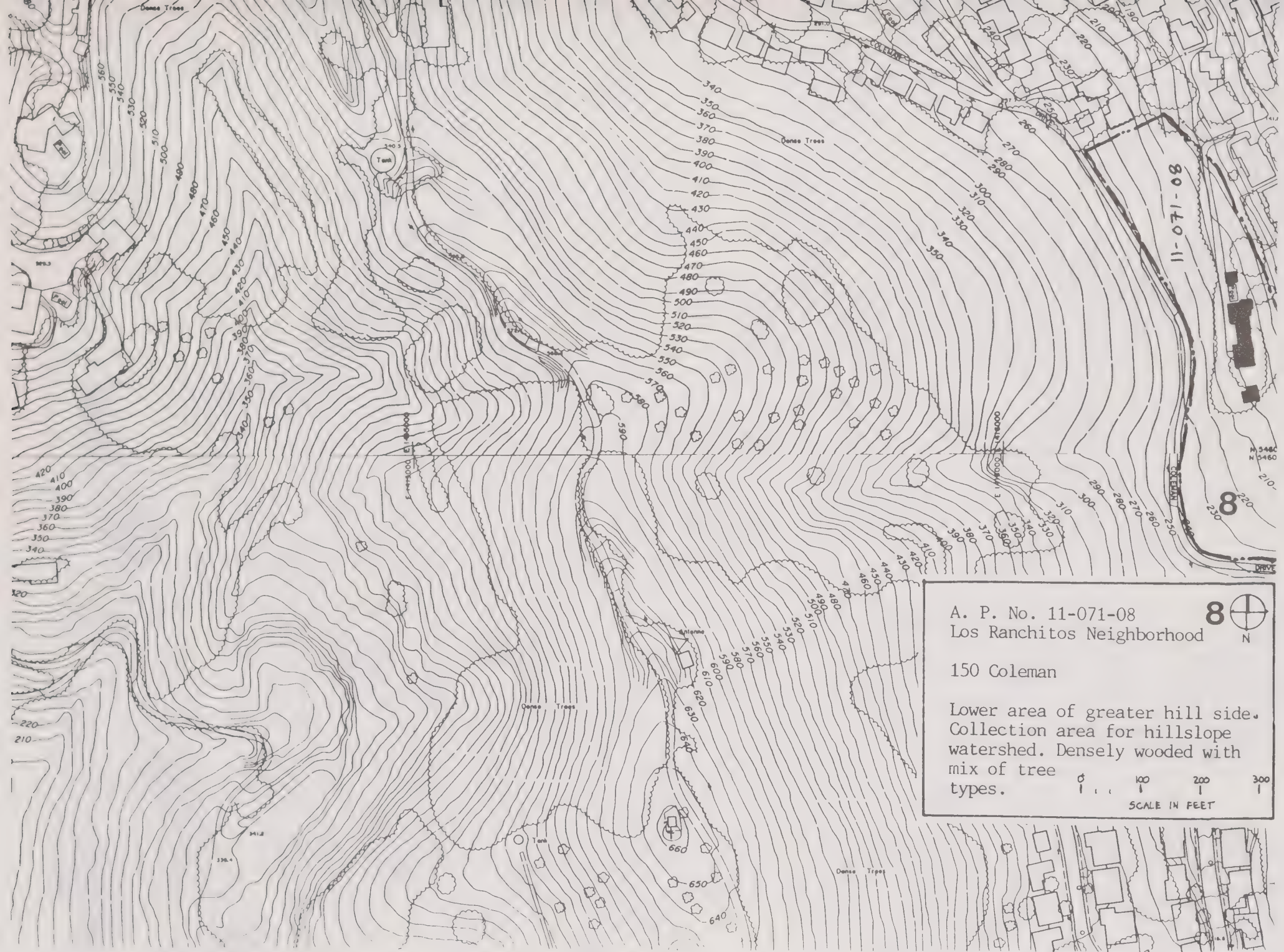


Hillside with Oak and Redwoods.  
Highly visible from neighborhood  
Steep slopes.  
Existing residence on lower  
portion of slope.

0 100 200 300  
SCALE IN FEET







A. P. No. 11-071-08  
Los Ranchitos Neighborhood



150 Coleman

Lower area of greater hill side.  
Collection area for hillslope  
watershed. Densely wooded with  
mix of tree  
types.

0 100 200 300  
SCALE IN FEET

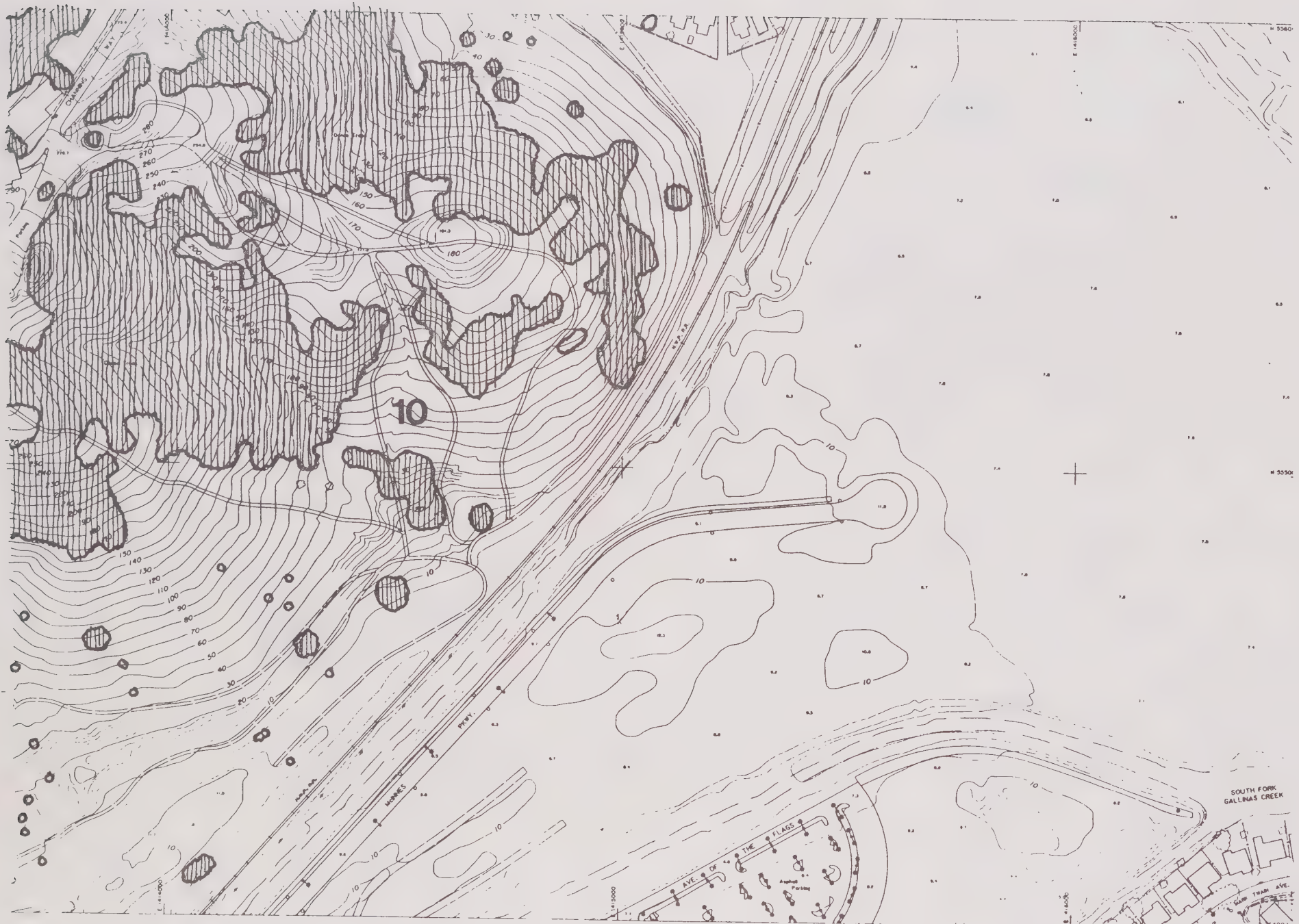


9 A. P. No. 11-131-04

Historically significant site  
"Maple Lane"  
Elko Lodge  
Steep Hillside area at north  
side of property. Oak savannah  
and some Oak woodland areas.  
South exposure.  
Visible from Downtown area and  
from across City.

0 100 200 300  
SCALE IN FEET













# Appendix H - Standards for Hillside Subdivision - Ordinance Number 1609.

## ORDINANCE NO. 1609 AN ORDINANCE OF THE CITY OF SAN RAFAEL AMENDING CHAPTER 15.34 OF THE SUBDIVISION ORDINANCE TO PROVIDE STANDARDS FOR HILLSIDE SUBDIVISIONS

THE COUNCIL OF THE CITY OF SAN RAFAEL DO ORDAIN AS FOLLOWS;  
DIVISION 1. Chapter 15.34 is amended as follows:

### Chapter 15.34 STANDARDS FOR HILLSIDE SUBDIVISIONS

**15.34.010 Objectives.** San Rafael General Plan goals and policies seek to protect public health and safety by minimizing hazards, including seismic and landslide risks, soil erosion, and fire danger associated with development on steep and/or unstable slopes. Additionally, plan policies encourage preservation of natural hillside features and the development of Hillside Site Design Standards. The standards for the design of subdivisions on slopes over 25% are intended to implement these objectives by requiring that lots in hillside subdivisions realistically relate to the natural topography of the land by limiting grading and retaining much of the natural terrain. The standards also implement plan policies by relating density to site constraints and to City design policies. Additionally, in the case of substandard streets, these provisions seek to assure adequate emergency access by providing additional onsite parking.

#### 15.34.020. Lot Design Standards

(a) **General:** The standards listed below shall be utilized to evaluate the lot configuration of hillside subdivision applications. In addition to the zoning regulations effective in the area, any lot hereafter created shall meet the density criteria and contain at least the minimum lot width and area as related to the applicable City of San Rafael General Plan 2000 land use plan designation and its natural topographical slope as set forth in the following tables. Lower densities and larger lot sizes may be required where potentially hazardous conditions or special natural features occur or where development would be highly visible to the neighborhood or community. In no instance can the density exceed that allowed by the zoning district.

Table 1  
Hillside Resource Residential Land Use Designation  
(0.1 - 0.5 units per gross acre)

Percent of slope	D.U. Per Gross Acre	Min. Lot Size	Avg. Lot Width
0-10%	.5	2 acres	150 feet
10-20%	.4	2 acres	150 feet
20-30%	.33	2 acres	150 feet
30-40%	.25	2 acres	150 feet
Over 40%	.2	2 acres	150 feet

Table 2  
Hillside Residential Land Use Designation  
(0.5 - 2.0 units per gross acre)

Percent of slope	D.U. Per Gross Acre	Min. Lot Size	Avg. Lot Width
0-10%	2.0	20,000 sq. ft.	100 feet
10-20%	1.625	20,000 sq. ft.	100 feet
20-30%	1.25	30,000 sq. ft.	100 feet
30-40%	.875	1 acre	150 feet
Over 40%	.5	2 acres	150 feet

**Table 3**  
**Low Density Land Use Designation**  
**(2 to 6.5 units per gross acre)**

Percent of slope	D.U. Per Gross Acre	Min. Lot Size	Avg. Lot Width
0-10%	6.5	5,000 sq. ft.	50 feet
10-20%	5.375	6,000 sq. ft.	50 feet
20-30%	4.25	7,500 sq. ft.	60 feet
30-40%	3.125	10,000 sq. ft.	75 feet
Over 40%	2.0	20,000 sq. ft.	100 feet

(b) For the purpose of this Ordinance, average slope shall be calculated before grading using the following formula:

$$S = \frac{.00229IL}{A}$$

where .00229 is the conversion factor for square feet; S is the average percent of slope; "I" is the contour interval in feet; "L" is the summation of length of the contour lines in scale feet; and A is the area of the parcel in acres.

For parcels over five acres in size, the applicant has the option of calculating the amount and location of land falling into each slope category. The applicant shall submit at the time of application a base topographical map of the site prepared and signed by a registered civil engineer or licensed land surveyor. The map shall have a scale of not less than one (1) inch equal to two hundred (200) feet and a contour interval of not more than five (5) feet provided that the contour interval may be ten (10) feet when the slope is more than twenty (20) percent. A uniform contour interval shall be used on any map. This base topographical map shall include all adjoining properties within 150 feet of the site boundaries. Slope bands in the range of 0 to 10 percent, 10 to 20 percent, 20 to 30 percent, 30 to 40 percent, and 40 percent or greater shall include, or be accompanied by, a tabulation of the land area in each slope category specified in acres. The exact method for computing the percent slope and area by percent slope category should be sufficiently described and presented so that a review can readily be made.

(c) For clustered developments or where it can be demonstrated that adequate access exists, a lot with lesser width and area than required by the percent of slope may be allowed where it furthers the goals of the Hillside Residential Design Guidelines and reduces project impacts providing that the overall project density is consistent with the Slope Tables. No lot shall be less than the minimum required by the Zoning Ordinance.

(d) Any lot in a large or small subdivision created for the purpose of development where the percent of slope is over 25% shall also require a Major Environmental and Design Review permit and shall be reviewed by the Design Review Board and the Planning Commission to assure that such lots and the subdivision design comply with the following General Plan criteria as implemented through the Hillside Residential Design Guidelines Manual:

- 1) Subdivision grading and filling to be minimized.
- 2) Avoids highly visible hillsides and ridgeline development.
- 3) Preserves hillsides as visual backdrop.
- 4) Steep slopes to be avoided.

- 5) Clustering of development to be utilized to minimize visual impacts.
- 6) Tree preservation is maximized.
- 7) Minimizes removal of natural vegetation.
- 8) More hazardous/unstable portions of site are avoided.
- 9) Mitigates geotechnical site constraints or conditions when needed.
- 10) Buildings achieve hillside design quality.
- 11) Preserves or protects unique or special natural features of the site, such as rock outcroppings, mature vegetation, landforms, creeks, drainage courses, hilltops or ridgelines.

(e) The following reports and maps shall be prepared prior to tentative or parcel map approval in order to insure that the subdivision design is consistent with the General Plan:

- 1) Geotechnical Review consistent with the Geotechnical Review Matrix shall be conducted.
- 2) A drainage report prepared by a California registered civil engineer experienced in hydrology and hydrologic investigation shall be prepared in accordance with the requirements outlined in the Hillside Residential Design Guidelines.
- 3) A Biological Survey shall be prepared which classified portions of the site by their degree of risk of plant communities from Wildland Fires and establishes guidelines for development in riparian and watershed areas.
- 4) An Arborist/Forester's Report consistent with the requirements outlined in the Hillside Residential Design Guidelines shall be prepared which establishes guidelines for the preservation of significant trees.
- 5) A grading and erosion control plan consistent with the requirements outlined in the Hillside Residential Design Guidelines shall be prepared.
- 6) A building envelope shall be established for each lot consistent with the Hillside Residential Design Guidelines.

#### 14.34.030 Street, Driveway, and Parking Standards

(a) Narrower street widths (acceptable to the City Engineer & other City Departments) can be approved when it will reduce grading impacts and the number of lots, topography, and the level of future traffic development justifies the reduction. 25 feet is the minimum width requirement for a public street.

(b) Each lot shall have a driveway, the grade of which shall not exceed eighteen percent, with adequate provision for ingress and egress. With a positive recommendation from the Design Review Board and City departments, an exception may be granted to allow grooved driveways with a grade of 18 - 25% when it will result in a project which has fewer impacts on grading, trees, and views.

(c) Each lot created on substandard city streets and all private streets shall provide a minimum of 2 off street guest parking places, not on the driveway

apron, except for condominium projects which shall meet condominium parking standards. These spaces should be conveniently placed relative to the dwelling unit which they serve. This requirement may be waived when the size or shape of the lot or the need for excessive grading make the requirement infeasible.

(d) No private street leading to driveways shall exceed an eighteen percent grade.

**DIVISION 2.** If any section, subsection, sentence, clause, or phrase of this ordinance is for any reason held to be invalid, such holding or holdings shall not affect the validity of the remaining portions of the ordinance. The Council declares that it would have passed this ordinance and each section, subsection, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared invalid.

**DIVISION 3.** This ordinance is for the preservation of the public health, safety, and welfare in that the San Rafael General Plan goals and policies seek to protect public health and safety by minimizing hazards, including seismic and landscape risks, soil erosion and fire danger associated with development on very steep and/or unstable slopes. Additional plan policy encourages preservation of natural hillside features. The ordinance provisions are intended to implement these objectives. Additionally, in the case of substandard streets, these provisions seek to assure adequate emergency access by providing additional onsite parking.

**DIVISION 4.** This ordinance shall be published once in full before its final passage in a newspaper of general circulation, published and circulated in said city and shall be in full force and effect thirty (30) days after its passage.

  
DOROTHY L. BREINER, Vice Mayor

Attest:

  
JEANNE M. LEONCINI, City Clerk

The foregoing Ordinance No. 1609 was read and introduced at a regular meeting of the City Council of the City of San Rafael, held on the 7th day of October, 1991, and ordered passed to print by the following vote, to wit:

AYES: COUNCILMEMBERS: Boro, Thayer and Vice Mayor Breiner

NOES: COUNCILMEMBERS: None

ABSENT: COUNCILMEMBERS: Shippey and Mayor Mulryan

and will come up for adoption as an ordinance of the City of San Rafael at a regular meeting of the Council to be held on the 21st day of October, 1991.

Jeanne M. Leoncini  
JEANNE M. LEONCINI, City Clerk



U.C. BERKELEY LIBRARIES



C124909207

